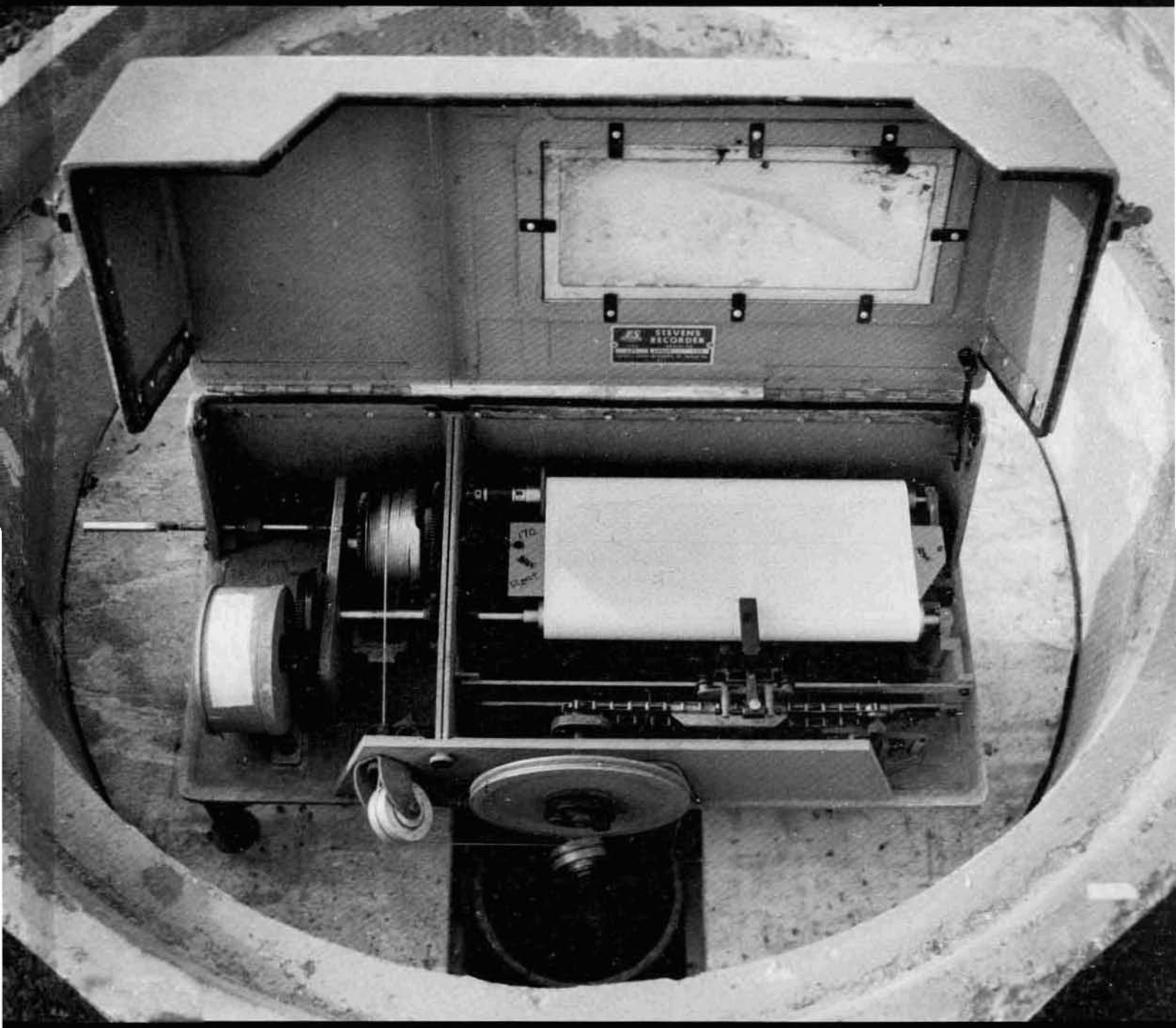
# Groundwater Level Data For Missouri Water Year 1991-1992

by

James E. Vandike




Water Resources Report No. 42

**Cover Photo:** *This water-level recorder installation at Rolla, Missouri uses a Stevens A-35 strip-chart (graphic) recorder to measure and record water-level fluctuations in a 6-inch diameter well drilled into the Ozark aquifer. Photo by James E. Vandike.*

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# GROUNDWATER LEVEL DATA FOR MISSOURI: WATER YEAR 1991-1992

by
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*Library of Congress Catalog Card Number: 93-78904*
*Missouri Classification Number: Ge 9:42*

*Vandike, James E., 1993, GROUNDWATER LEVEL DATA FOR MISSOURI: WATER YEAR 1991-1992, Missouri Department of Natural Resources, Division of Geology and Land Survey, Water Resources Report No. 42, 95 p., 46 illus., 46 tbls.*

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## ABSTRACT

Groundwater levels from 44 wells in Missouri were continuously monitored during water year 1991-1992 (October 1, 1991 through September 30, 1992). Data collected at these observation wells using graphic and digital water-level recorders are presented in tables showing location and well information, daily mean water levels, monthly high, low, and mean water levels, and yearly mean water levels. Hydrographs of each well are also displayed, along with precipitation data from nearby National Weather Service stations.


## INTRODUCTION

Groundwater, one of Missouri's most important natural resources, supplies the majority of the state's rural residents as well as most of its towns and cities the water they need. Domestic use accounts for much of the water used, but groundwater is also tapped by many businesses and industries, and provides water for agricultural uses such as irrigation and fish rearing. Groundwater resources vary greatly throughout Missouri. Groundwater quality and aquifer yields are excellent in the central and southern parts of the state, and wells supply nearly every town and essentially all of the rural residents. In most of northern and west-central Missouri, however, the aquifers that supply good-quality water in the southern part of the state yield highly-mineralized water. The naturally poor water quality coupled with low well yields makes developing a usable groundwater supply in parts of west-central Missouri all but impossible. The natural quality of groundwater from glacial deposits north of the Missouri River varies from fair to poor, and well yields are generally low. But for lack of more suitable supplies, many rural residents still rely on water from shallow wells drilled or hand-dug into the glacial drift for water supply.

Groundwater in Missouri originates as precipitation. After precipitation occurs, much of the water is returned to the atmosphere through evaporation or is transpired by plants. Some of the remainder provides surface-water runoff and feeds lakes, rivers, and streams. The remaining water moves downward through soil and rock and recharges the groundwater system. Groundwater recharge rates vary considerably and are generally lowest in northern and west central Missouri where precipitation is less, and where surficial materials and shallow bedrock have low permeabilities. Groundwater recharge is greatest in the Ozark region where precipitation is more abundant, and surficial materials and bedrock units are much more permeable. The highest groundwater recharge rates occur in areas of the Ozarks where karst features such as sinkholes and losing streams capture large quantities of surface water and channel it underground.

Groundwater levels change in response to many factors. Obviously, water removed from aquifers by wells will decrease the amount of water in storage, and cause water-level declines. Groundwater levels also decline because of natural discharge from aquifers to springs and streams. Conversely, recharge from precipitation replenishes groundwater, and causes water-levels to rise. Groundwater-level fluctuations can also be caused by changes in barometric pressure, tidal effects (due to the gravitational effects of the sun and moon), and even earthquakes.

Compared to most other states, Missouri has excellent groundwater resources. The average volume of potable water in storage is conserva-

tively estimated at 43 trillion gallons. But groundwater is a finite resource; understanding, protecting, and managing it requires certain information, including fluctuations and long-term trends in water levels. Since 1955, the Missouri Department of Natural Resources, Division of Geology and Land Survey (formerly known as the Missouri Geological Survey and Water Resources) has maintained a network of water wells equipped with recording instruments to continuously measure groundwater levels. A few of the wells in the network were constructed specifically as observation wells, but most were originally used for private or public water supply, or drilled as oil or mineral test holes. New wells are added to the network occasionally, and sometimes other wells are discontinued, but data from many of the wells date back to the 1950s.

Prior to 1980, the observation wells were equipped with Stevens' Model A-35 strip-chart recorders powered by weight-driven clocks. These instruments use a ink pen to record water-level changes on a long roll of graph paper that is advanced through the machine at a rate of 1.2 inches per day. A float resting on the surface of the water is connected to a pulley on the recorder by a cable. A counterweight is placed on the opposite end of the cable to provide tension. Changes in water level cause the pulley to turn, which moves the pen across the graph paper. Most of the A-35 recorders have a vertical scale of 2 inchs on the graph per foot of water-level change.

Beginning in 1980, many of the observation wells were equipped with Stevens Series 7000 digital water-level recorders. These instruments also use a float to detect changes in water level, but the float is connected to the recorder pulley with a thin, flat, spline tape. A counterweight keeps the tape under tension. Instead of using a pen and graph paper, the digital recorders punch a series of holes in a paper tape that correlate to water level in the well. Unlike the graphic recorders, the digital recorders do not continuously record water levels. Instead, the interval that data is to be collected is set on a timer. Data can be collected at 5-minute intervals with a minimum data-collection interval of 5 minutes and a maximum interval of 1 hour. The recorders are powered by 9-volt dry cell batteries. To conserve power, most of the recorders are set to collect hourly water-level readings, and water-level changes of 0.01 ft can be measured by the recorder.

This report contains daily mean water level data for 44 wells. Also presented are hydrographs depicting daily mean water level and local precipitation. Precipitation data for all of the stations except Bixby are from the National Weather Service. Precipitation data for Bixby was provided by Mike Kearney of The Doe Run Company. Groundwater-level data collected from this observation well network has been used by numerous people and agencies, and portions of the data have been published in various reports. However, before 1985, data for the entire network was never published. Berkas and others (1989) present data collected during calendar years 1985 and 1986, and long-term hydrographs of several observation wells. Data collected during water years 1989, 1990, and 1991 are published by the U. S. Geological Survey in their Water Resources Data for Missouri series.

('Manufacturers names are included in this report for technical accuracy, and do not represent endorsement of specific companies or products.)

# ACKNOWLEDGMENTS

Groundwater-level data presented in this report represents the combined efforts of several individuals who visit the observation wells on a regular basis, provide necessary repairs and maintenance, and collect the data charts and tapes for processing.

The following Department of Natural Resources personnel are responsible for operating the observation well network: Rex Bohm, Cynthia Brookshire, Randolph L. Brown, Don E. Miller, James E. Vandike, and James Vaughn.

# GROUNDWATER LEVEL DATA

The water-level data tables presented in this report contain three sections: General well information, mean daily water level, and mean monthly and yearly water levels. The general information includes location, well construction, geologic, and other information. Figure 2 shows location and aquifer information for each well. Table 2 shows the well reference number, county name, well name, and page number for data from each well.

### Well Name

For identification, each well is assigned the name of the nearest town or the name of the well owner.

### Location

Well locations are given in two ways. Most of Missouri was surveyed using the General Land Office survey coordinate system (fig. 1). The county, township, range, and section numbers are included for each well, as well as the quarter-quarter location within the section. Longitude and latitude for each well is also shown.

### Owner and DGLS Log Number

The owner of the well is listed. Insoluble residue well logs that were made by the Division of Geology and Land Survey are available for many of the wells. Log numbers are shown for those wells that have logs available.

### Datum

Approximate land surface elevation and the measuring point used at the installation is shown.

### Well Characteristics

Well depth and diameter, casing length and diameter, and type of grouting are shown. Most of the wells are drilled into consolidated rock and do not contain a well screen. Where available, screen length and slot size information are shown for wells that produce from alluvium and glacial drift.

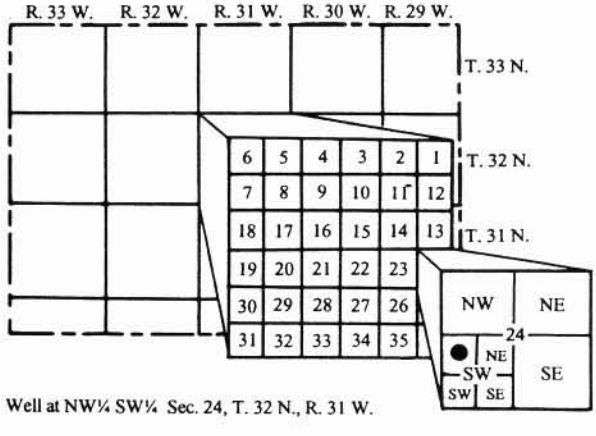


Figure 1. General Land Office survey coordinate system

### Geologic Information

Wells producing from alluvium and glacial drift are so described. Formations open to the well below casing depth in rock wells are listed. Table 1 is a generalized stratigraphic column for Missouri, and shows the major aquifer zones.

### Type of Instrumentation

The type of recorder, Stevens A-35 (graphic) or Stevens Series 7000 (digital), used at the installation is shown, as well as the period of record for the observation well.

## REFERENCES CITED

Berkas, Wayne R., Endicott, Cynthia, and Cross, Pierce W., 1989, Groundwater level data for Missouri, 1985-1986: Missouri Department of Natural Resources, Division of Geology and Land Survey, Water Resources Report no. 37, 83 p.

Koenig, J.W., ed., 1961, The stratigraphic succession in Missouri: Missouri Geological Survey and Water Resources, 2nd series, v. 40, 185 p.

U.S. Department of Commerce, 1991, Climatological Data for Missouri (October, November, and December): National Climatic Data Center, National Weather Service, vol. 95, nos. 10, 11, 12.

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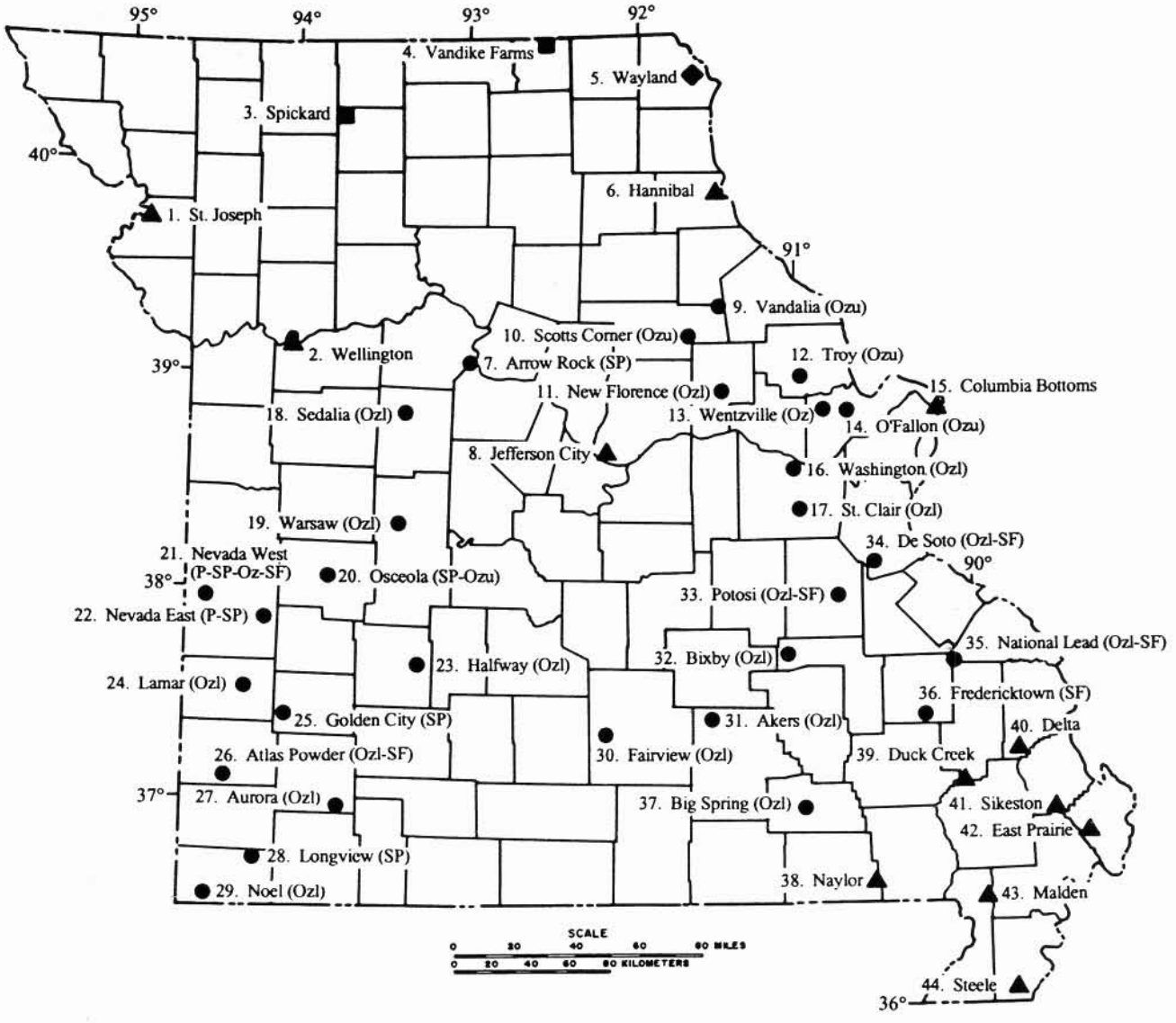
| SYSTEM | SERIES | GROUP | GEOLOGIC UNIT | HYDROGEOLOGIC UNIT |
|---|---|---|---|---|
| Quaternary | Holocene | | Alluvium | Missouri and Mississippi rivers and in Mississippi embayment, 500-2000 gpm. Yields are less along smaller rivers. |
| | Pleistocene | | Loess, till, and other drift, sand and gravel | Drift and till typically yield 0-5 gpm. Drift-filled preglacial valleys typically yield 50-500 gpm. |
| Tertiary | (undifferentiated) | | | Wilcox Group (Mississippi embayment only), 50-400 gpm |
| Cretaceous | (undifferentiated) | | | McNairy Formation (Mississippi embayment only), 200-500 gpm |
| Pennsylvanian | (undifferentiated) | | | Northern and west-central Missouri, 0-20 gpm, regionally forms a confining layer. |
| Mississippian | Chesterian | | (undifferentiated) | Springfield Plateau aquifer<br>Southwest, central, and eastern Missouri, 5-30 gpm. |
| | Meramecian | | (undifferentiated) | |
| | Osagean | | Keokuk Limestone<br>Burlington Limestone<br>Grand Falls Formation<br>Reeds Spring Formation<br>Pierson Formation | |
| | Kinderhookian | Chouteau | Northview Formation<br>Sedalia Formation<br>Compton Formation | Ozark confining unit |
| | | | Hannibal Formation | |
| Devonian | (undifferentiated) | | | |
| Silurian | (undifferentiated) | | | |
| Ordovician | Cincinnatian | | Orchard Creek Shale<br>Thebes Sandstone<br>Maquoketa Shale<br>Cape Limestone | |
| | Champlainian | | Kimmswick Formation<br>Decorah Formation<br>Plattin Formation<br>Joachim Dolomite<br>Dutchtown Formation<br>St. Peter Sandstone<br>Everton Formation | Ozark aquifer (upper)<br>Yield is greatest from St. Peter Sandstone. Yields of 5 to 50 gpm are possible. |
| | Canadian | | Smithville Formation<br>Powell Dolomite<br>Cotter Dolomite<br>Jefferson City Dolomite<br>Roubidoux Formation<br>Gasconade Dolomite<br>Gunter Sandstone Member | Ozark aquifer (lower)<br>Yields vary greatly with location and well depth. In Salem Plateau, yields are typically 50-500 gpm. In Springfield Plateau and central Missouri, yields are typically 500 to 1200 gpm. |
| Cambrian | Upper Cambrian | | Eminence Dolomite<br>Potosi Dolomite | |
| | | Elvins | Derby-Doerun Dolomite<br>Davis Formation | St. Francois confining unit |
| | | | Bonneterre Formation<br>Lamotte Sandstone | St. Francois aquifer<br>Yields of 10 to 100 gpm are possible. |
| Precambrian | (undifferentiated) | | Igneous, metasediments, and other metamorphic rock. | Not a significant aquifer |

[The stratigraphic nomenclature used in this report is that of the Missouri Department of Natural Resources, Division of Geology and Land Survey modified after Koenig (1961)].

Table 1. Generalized section of geologic and hydrogeologic units.




▲ 43. Malden Reference number, well name, and location

Type of aquifer open to well

▲ Alluvial

■ Glacial drift

◆ Alluvial and glacial drift

● Bedrock

P Pennsylvanian strata
SP Springfield Plateau aquifer
Oz Ozark aquifer
u-upper part
l-lower part
SF St. Francois aquifer

Figure 2. Reference number, well name, location, and producing aquifer for groundwater-level observation wells.

# DATA

| Map Number | County | Well name | Page |
|---|---|---|---|
| 1 | Buchanan | St. Joseph | 8 |
| 2 | Lafayette | Wellington | 10 |
| 3 | Grundy | Spickard | 12 |
| 4 | Schuyler | Vandike Farms | 14 |
| 5 | Clark | Wayland | 16 |
| 6 | Marion | Hannibal | 18 |
| 7 | Cooper | Arrow Rock | 20 |
| 8 | Callaway | Jefferson City | 22 |
| 9 | Audrain | Vandalia | 24 |
| 10 | Audrain | Scotts Corner | 26 |
| 11 | Montgomery | New Florence | 28 |
| 12 | Lincoln | Troy | 30 |
| 13 | St. Charles | Wentzville | 32 |
| 14 | St. Charles | O'Fallon | 34 |
| 15 | St. Louis | Columbia Bottoms | 36 |
| 16 | Franklin | Washington | 38 |
| 17 | Franklin | St. Clair | 40 |
| 18 | Pettis | Sedalia | 42 |
| 19 | Benton | Warsaw | 44 |
| 20 | St. Clair | Osceola | 46 |
| 21 | Vernon | Nevada West | 48 |
| 22 | Vernon | Nevada East | 50 |
| 23 | Polk | Halfway | 52 |
| 24 | Barton | Lamar | 54 |
| 25 | Dade | Golden City | 56 |
| 26 | Jasper | Atlas Powder | 58 |
| 27 | Lawrence | Aurora | 60 |
| 28 | McDonald | Longview | 62 |
| 29 | McDonald | Noel | 64 |
| 30 | Texas | Fairview | 66 |
| 31 | Shannon | Akers | 68 |
| 32 | Iron | Bixby | 70 |
| 33 | Washington | Potosi | 72 |
| 34 | Jefferson | DeSoto | 74 |
| 35 | Perry | National Lead (PH17) | 76 |
| 36 | Madison | Fredericktown | 78 |
| 37 | Carter | Big Spring | 80 |
| 38 | Ripley | Naylor | 82 |
| 39 | Bollinger | Duck Creek | 84 |
| 40 | Cape Girardeau | Delta | 86 |
| 41 | Scott | Sikeston | 88 |
| 42 | Mississippi | East Prairie | 90 |
| 43 | Dunklin | Malden | 92 |
| 44 | Pemiscot | Steele | 94 |

Table 2. Data index for groundwater level observation wells.

BUCHANAN COUNTY: SW1/4 NW1/4 SEC. 31, T. 57 N., R. 35 W. DGLS LOG NUMBER: 16116
37 DEG 42 MIN 54 SEC NORTH LATITUDE, 94 DEG 52 MIN 45 SEC WEST LONGITUDE WELL OWNER: ST. JOSEPH STOCKYARDS
LAND SURFACE ELEVATION: 820 FEET ABOVE MEAN SEA LEVEL. (NOTE: FLOAT HUNG AUG 7 TO SEP 2)
MEASURING POINT IS BASE OF RECORDER BOX, 0.75 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 83.5 FEET WELL DIAMETER: 8 INCHES
CASING: 58 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED, 4 INCH STEEL PRODUCTION CASING FROM 58 TO 71 FEET
WELL PRODUCES FROM THE MISSOURI RIVER ALLUVIUM
SCREEN INFORMATION: WELL CONTAINS 4 FEET OF 4 INCH DIAMETER, 0.040 SLOT WIRE-WOUND STAINLESS STEEL WELL SCREEN
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1984), GRAPHIC RECORDER INSTALLED IN 1957, 35 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24.59 | 24.47 | 25.89 | 25.63 | 25.56 | 25.42 | 24.80 | 22.70 | 22.09 | 22.72 | 18.37 | 18.70 |
| 2 | 24.53 | 24.48 | 25.86 | 25.61 | 25.57 | 25.44 | 24.72 | 22.63 | 22.10 | 22.84 | 18.35 | 18.70 |
| 3 | 24.52 | 24.53 | 25.83 | 25.58 | 25.60 | 25.51 | 24.64 | 22.63 | 22.17 | 23.00 | 18.36 | 19.81 |
| 4 | 24.52 | 24.56 | 25.91 | 25.60 | 25.64 | 25.58 | 24.58 | 22.46 | 22.22 | 23.08 | 18.45 | 20.95 |
| 5 | 24.51 | 24.54 | 25.93 | 25.59 | 25.65 | 25.64 | 24.61 | 22.14 | 22.27 | 23.08 | 18.63 | 20.93 |
| 6 | 24.46 | 24.61 | 25.94 | 25.59 | 25.64 | 25.67 | 24.64 | 21.77 | 22.34 | 23.08 | 18.69 | 20.90 |
| 7 | 24.34 | 24.76 | 25.93 | 25.56 | 25.65 | 25.72 | 24.67 | 21.51 | 22.42 | 23.05 | 18.70 | 20.87 |
| 8 | 24.24 | 24.90 | 25.93 | 25.49 | 25.71 | 25.71 | 24.69 | 21.29 | 22.44 | 23.04 | 18.70 | 20.78 |
| 9 | 24.25 | 24.94 | 26.02 | 25.50 | 25.75 | 25.62 | 24.67 | 21.19 | 22.40 | 23.07 | 18.70 | 20.59 |
| 10 | 24.31 | 25.00 | 26.05 | 25.53 | 25.74 | 25.65 | 24.66 | 21.20 | 22.34 | 23.04 | 18.70 | 20.55 |
| 11 | 24.31 | 25.10 | 26.04 | 25.52 | 25.80 | 25.69 | 24.67 | 21.43 | 22.26 | 22.97 | 18.70 | 20.61 |
| 12 | 24.31 | 25.19 | 25.94 | 25.48 | 25.83 | 25.69 | 24.80 | 21.70 | 22.16 | 22.87 | 18.70 | 20.64 |
| 13 | 24.32 | 25.23 | 25.92 | 25.48 | 25.82 | 25.72 | 24.81 | 21.99 | 22.07 | 22.75 | 18.70 | 20.65 |
| 14 | 24.33 | 25.26 | 25.99 | 25.50 | 25.78 | 25.67 | 24.66 | 22.10 | 22.05 | 22.41 | 18.70 | 20.70 |
| 15 | 24.36 | 25.37 | 25.99 | 25.54 | 25.72 | 25.63 | 24.55 | 22.17 | 22.07 | 21.85 | 18.70 | 20.82 |
| 16 | 24.37 | 25.51 | 25.89 | 25.54 | 25.74 | 25.57 | 24.48 | 22.18 | 22.08 | 21.49 | 18.70 | 20.94 |
| 17 | 24.36 | 25.50 | 25.79 | 25.51 | 25.70 | 25.51 | 24.43 | 22.20 | 22.17 | 21.28 | 18.70 | 20.94 |
| 18 | 24.50 | 25.44 | 25.80 | 25.56 | 25.63 | 25.49 | 24.32 | 22.25 | 22.35 | 21.17 | 18.70 | 20.85 |
| 19 | 24.65 | 25.48 | 25.81 | 25.57 | 25.65 | 25.45 | 24.24 | 22.25 | 22.45 | 21.10 | 18.70 | 20.87 |
| 20 | 24.66 | 25.56 | 25.79 | 25.57 | 25.64 | 25.34 | 24.31 | 22.16 | 22.42 | 20.98 | 18.70 | 20.85 |
| 21 | 24.60 | 25.60 | 25.79 | 25.58 | 25.58 | 25.20 | 24.12 | 21.99 | 22.43 | 20.61 | 18.70 | 20.81 |
| 22 | 24.53 | 25.62 | 25.74 | 25.56 | 25.53 | 25.12 | 23.90 | 21.82 | 22.44 | 20.28 | 18.70 | 20.93 |
| 23 | 24.52 | 25.68 | 25.68 | 25.56 | 25.48 | 25.07 | 23.90 | 21.78 | 22.37 | 20.11 | 18.70 | 21.11 |
| 24 | 24.52 | 25.71 | 25.73 | 25.63 | 25.47 | 25.02 | 23.90 | 21.76 | 22.34 | 20.11 | 18.70 | 21.11 |
| 25 | 24.53 | 25.73 | 25.70 | 25.61 | 25.47 | 25.00 | 23.90 | 21.70 | 22.38 | 20.18 | 18.70 | 21.01 |
| 26 | 24.52 | 25.71 | 25.63 | 25.63 | 25.44 | 24.97 | 23.90 | 21.70 | 22.41 | 19.86 | 18.70 | 20.98 |
| 27 | 24.52 | 25.71 | 25.59 | 25.59 | 25.39 | 24.99 | 23.90 | 21.75 | 22.44 | 18.54 | 18.70 | 21.00 |
| 28 | 24.49 | 25.72 | 25.59 | 25.60 | 25.37 | 24.98 | 23.90 | 21.82 | 22.44 | 18.39 | 18.70 | 21.05 |
| 29 | 24.50 | 25.74 | 25.56 | 25.58 | 25.40 | 24.95 | 23.33 | 21.87 | 22.45 | 18.38 | 18.70 | 21.10 |
| 30 | 24.62 | 25.80 | 25.56 | 25.56 | ------ | 24.94 | 22.88 | 21.92 | 22.57 | 18.38 | 18.70 | 21.11 |
| 31 | 24.62 | ------ | 25.61 | 25.56 | ------ | 24.86 | ------ | 22.03 | ------ | 18.36 | 18.70 | ------ |
| MIN | 24.24 | 24.47 | 25.56 | 25.48 | 25.37 | 24.86 | 22.88 | 21.19 | 22.05 | 18.36 | 18.35 | 18.70 |
| MAX | 24.66 | 25.80 | 26.05 | 25.63 | 25.83 | 25.72 | 24.81 | 22.70 | 22.57 | 23.08 | 18.70 | 21.11 |
| MEAN | 24.46 | 25.25 | 25.82 | 25.56 | 25.62 | 25.38 | 24.32 | 21.94 | 22.30 | 21.36 | 18.66 | 20.70 |

1992 EXTREMES: MINIMUM - 18.35 (AUG 2), MAXIMUM - 26.05 (DEC 10), MEAN - 23.44

Table 3. Groundwater level data, WY 1991-1992, St. Joseph observation well.

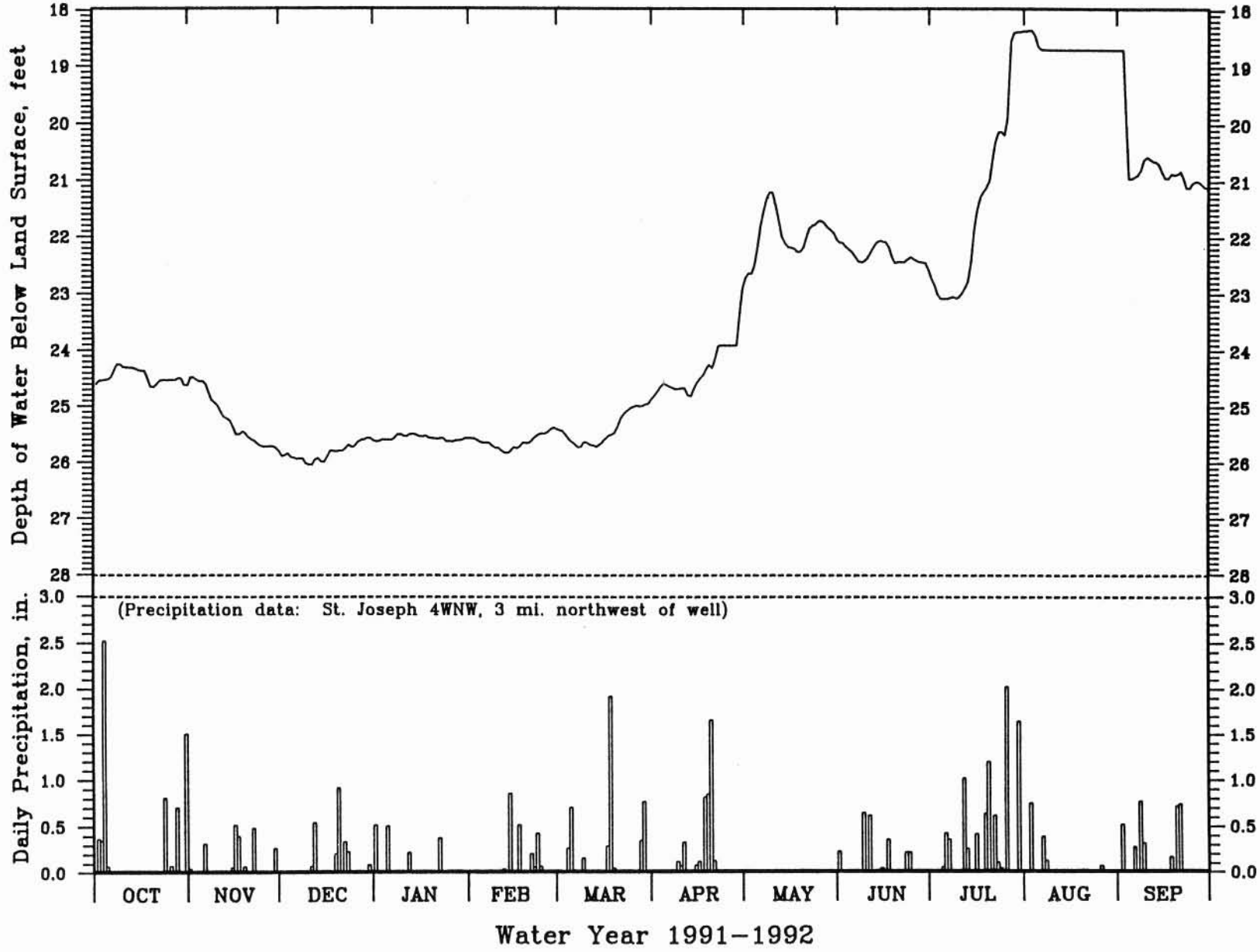



Figure 3. Water-level hydrograph and precipitation, St. Joseph observation well.

LAFAYETTE COUNTY: SW1/4 SW1/4 SEC. 11, T. 50 N., R. 28 W. DGLS LOG NUMBER: NONE
39 DEG 08 MIN 52 SEC NORTH LATITUDE, 94 DEG 00 MIN 33 SEC WEST LONGITUDE WELL OWNER: LAYFAYETTE CO. PWSD #1
LAND SURFACE ELEVATION: 690 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 6.0 FEET ABOVE LAND SURFACE
TOTAL DEPTH: NA WELL DIAMETER: NA (NOTE: **** DENOTES MISSING DATA)
CASING: NA
WELL PRODUCES FROM THE MISSOURI RIVER ALLUVIUM
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1988, 4 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19.60 | **** | **** | **** | **** | **** | **** | 20.09 | 16.83 | 16.86 | **** | 12.03 |
| 2 | 19.60 | **** | **** | **** | **** | **** | **** | 19.85 | 16.70 | 17.36 | **** | 14.96 |
| 3 | 19.50 | **** | **** | **** | **** | **** | **** | 19.71 | 16.71 | 17.36 | **** | 14.81 |
| 4 | 19.45 | **** | **** | **** | **** | **** | **** | 19.60 | 16.83 | 17.84 | **** | 15.18 |
| 5 | 19.49 | **** | **** | **** | **** | **** | **** | 19.47 | 16.79 | 17.90 | **** | 15.16 |
| 6 | 19.49 | **** | **** | **** | **** | **** | **** | 19.33 | 16.91 | 17.80 | **** | 15.05 |
| 7 | 19.43 | **** | **** | **** | **** | **** | **** | 19.00 | 17.22 | 18.36 | **** | 15.43 |
| 8 | 19.46 | **** | **** | **** | **** | **** | **** | 17.32 | 17.25 | 19.95 | **** | 16.41 |
| 9 | 19.55 | **** | **** | **** | **** | **** | **** | 17.19 | 17.22 | 20.55 | **** | 16.90 |
| 10 | 19.56 | **** | **** | **** | **** | **** | **** | 17.16 | 17.16 | 20.74 | **** | 16.64 |
| 11 | 19.56 | **** | **** | **** | **** | **** | **** | 17.17 | 17.06 | 20.67 | **** | 16.43 |
| 12 | 19.62 | **** | **** | **** | **** | **** | **** | 17.15 | 17.12 | 20.45 | **** | 16.37 |
| 13 | 19.58 | **** | **** | **** | **** | **** | **** | 17.02 | 17.12 | 20.31 | **** | 16.17 |
| 14 | 19.64 | **** | **** | **** | **** | **** | 18.21 | 16.97 | 17.40 | 20.38 | **** | 15.29 |
| 15 | 19.67 | **** | **** | **** | **** | **** | 18.11 | 16.96 | 17.79 | 20.36 | **** | 14.36 |
| 16 | 19.65 | **** | **** | **** | **** | **** | 17.97 | 17.05 | 18.00 | 20.53 | **** | 14.03 |
| 17 | 19.66 | **** | **** | **** | **** | **** | 18.09 | 17.57 | 17.87 | **** | 11.49 | 14.20 |
| 18 | 19.72 | **** | **** | **** | **** | **** | 18.28 | 17.75 | 17.77 | **** | 11.19 | 14.68 |
| 19 | 19.68 | **** | **** | **** | **** | **** | 18.62 | 17.66 | 17.73 | **** | 10.87 | 14.73 |
| 20 | 19.61 | **** | **** | **** | **** | **** | 20.01 | 17.76 | 17.65 | **** | 10.54 | 14.60 |
| 21 | 19.59 | **** | **** | **** | **** | **** | 20.51 | 17.73 | 17.50 | **** | 10.10 | 14.79 |
| 22 | 19.63 | **** | **** | **** | **** | **** | 20.88 | 17.63 | 17.42 | **** | 9.67 | 14.57 |
| 23 | 19.66 | **** | **** | **** | **** | **** | 21.33 | 17.51 | 17.28 | **** | 9.23 | 14.19 |
| 24 | **** | **** | **** | **** | **** | **** | 21.39 | 17.35 | 17.11 | **** | 8.80 | 13.84 |
| 25 | **** | **** | **** | **** | **** | **** | 21.16 | 17.25 | 17.02 | **** | 8.44 | 13.59 |
| 26 | **** | **** | **** | **** | **** | **** | 20.90 | 17.16 | 16.96 | **** | 8.50 | 13.32 |
| 27 | **** | **** | **** | **** | **** | **** | 20.73 | 17.04 | 16.89 | **** | 8.51 | 13.09 |
| 28 | **** | **** | **** | **** | **** | **** | 20.56 | 17.00 | 16.77 | **** | 8.25 | 12.87 |
| 29 | **** | **** | **** | **** | **** | **** | 20.36 | 16.97 | 16.75 | **** | 8.02 | 12.76 |
| 30 | **** | **** | **** | **** | ------ | **** | 20.24 | 16.89 | 16.78 | **** | 7.82 | 12.66 |
| 31 | **** | ------ | **** | **** | ------ | **** | ------ | 16.84 | ------ | **** | 7.77 | ------ |
| MIN | 19.43 | **** | **** | **** | **** | **** | 17.97 | 16.84 | 16.70 | 16.86 | 7.77 | 12.03 |
| MAX | 19.72 | **** | **** | **** | **** | **** | 21.39 | 20.09 | 18.00 | 20.74 | 11.49 | 16.90 |
| MEAN | **** | **** | **** | **** | **** | **** | **** | 17.78 | 17.19 | **** | **** | 14.64 |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 4. Groundwater level data, WY 1991-1992, Wellington observation well.

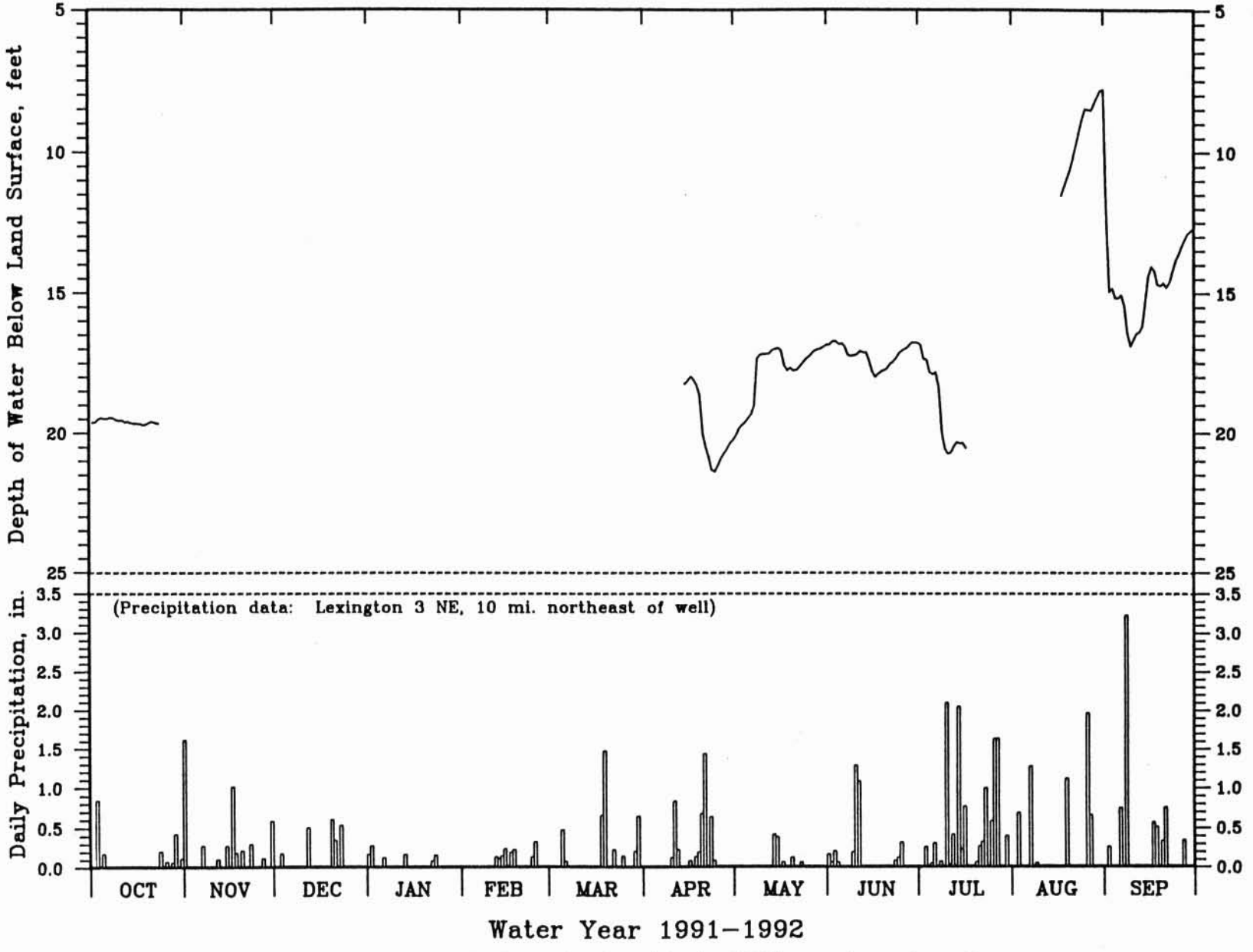



Figure 4. Water-level hydrograph and precipitation, Wellington observation well.

GRUNDY COUNTY: SE1/4 NW1/4 SEC. 20, T. 63 N., R. 25 W. DGLS LOG NUMBER: NONE
40 DEG 14 MIN 44 SEC NORTH LATITUDE, 93 DEG 44 MIN 20 SEC WEST LONGITUDE WELL OWNER: UNIV. OF MO.
LAND SURFACE ELEVATION: 788 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 2.5 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 140 FEET WELL DIAMETER: NA
CASING: 136 FEET OF STEEL CASING, NOT PRESSURE GROUTED (NOTE: **** DENOTES MISSING DATA)
WELL PRODUCES FROM GLACIAL DRIFT
SCREEN INFORMATION: WELL CONTAINS 4 FEET OF WIRE-WRAPPED STAINLESS STEEL WELL SCREEN
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1980), GRAPHIC RECORDER INSTALLED IN 1958, 34 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.83 | 12.67 | 12.06 | 11.49 | 11.06 | 10.60 | 10.18 | **** | **** | **** | **** | **** |
| 2 | 13.79 | 12.73 | 11.99 | 11.42 | 11.04 | 10.61 | 10.17 | **** | **** | **** | **** | **** |
| 3 | 13.76 | 12.74 | 11.97 | 11.40 | 11.04 | 10.59 | 10.10 | **** | **** | **** | **** | **** |
| 4 | 13.55 | 12.71 | 12.00 | 11.40 | 11.04 | 10.58 | 10.11 | **** | **** | **** | **** | **** |
| 5 | 13.53 | 12.64 | 11.94 | 11.36 | 11.02 | 10.52 | 10.13 | **** | **** | **** | **** | **** |
| 6 | 13.53 | 12.64 | 11.92 | 11.35 | 10.98 | 10.47 | 10.12 | **** | **** | **** | **** | **** |
| 7 | 13.48 | 12.64 | 11.88 | 11.31 | 10.98 | 10.47 | 9.95 | **** | **** | **** | **** | **** |
| 8 | 13.43 | 12.64 | 11.87 | 11.28 | 11.00 | 10.46 | **** | **** | **** | **** | **** | **** |
| 9 | 13.42 | 12.58 | 11.90 | 11.30 | 11.00 | 10.43 | **** | **** | **** | **** | **** | **** |
| 10 | 13.40 | 12.55 | 11.88 | 11.30 | 10.98 | 10.44 | **** | **** | **** | **** | **** | **** |
| 11 | 13.32 | 12.54 | 11.87 | 11.26 | 11.00 | 10.43 | **** | **** | **** | **** | **** | **** |
| 12 | 13.31 | 12.51 | 11.77 | 11.21 | 10.97 | 10.42 | **** | **** | **** | **** | **** | **** |
| 13 | 13.27 | 12.45 | 11.78 | 11.19 | 10.93 | 10.42 | **** | **** | **** | **** | **** | **** |
| 14 | 13.25 | 12.41 | 11.82 | 11.20 | 10.86 | 10.41 | **** | **** | **** | **** | **** | **** |
| 15 | 13.23 | 12.39 | 11.83 | 11.23 | 10.82 | 10.43 | **** | **** | **** | **** | **** | **** |
| 16 | 13.20 | 12.40 | 11.78 | 11.19 | 10.85 | 10.39 | **** | **** | **** | **** | **** | **** |
| 17 | 13.16 | 12.30 | 11.78 | 11.19 | 10.78 | 10.38 | **** | **** | **** | **** | **** | **** |
| 18 | 13.19 | 12.25 | 11.82 | 11.23 | 10.74 | 10.28 | **** | **** | **** | **** | **** | **** |
| 19 | 13.19 | 12.26 | 11.80 | 11.18 | 10.77 | 10.30 | **** | **** | **** | **** | **** | **** |
| 20 | 13.14 | 12.28 | 11.73 | 11.16 | 10.77 | 10.32 | **** | **** | **** | **** | **** | **** |
| 21 | 13.06 | 12.24 | 11.70 | 11.14 | 10.78 | 10.27 | **** | **** | **** | **** | **** | **** |
| 22 | 13.02 | 12.22 | 11.62 | 11.09 | 10.75 | 10.27 | **** | **** | **** | **** | **** | **** |
| 23 | 13.00 | 12.19 | 11.58 | 11.08 | 10.72 | 10.27 | **** | **** | **** | **** | **** | **** |
| 24 | 12.98 | 12.19 | 11.61 | 11.11 | 10.71 | 10.26 | **** | **** | **** | **** | **** | **** |
| 25 | 12.99 | 12.19 | 11.60 | 11.11 | 10.71 | 10.25 | **** | **** | **** | **** | **** | **** |
| 26 | 12.96 | 12.13 | 11.58 | 11.12 | 10.67 | 10.24 | **** | **** | **** | **** | **** | **** |
| 27 | 12.94 | 12.10 | 11.59 | 11.12 | 10.65 | 10.27 | **** | **** | **** | **** | **** | **** |
| 28 | 12.86 | 12.06 | 11.56 | 11.13 | 10.62 | 10.23 | **** | **** | **** | **** | **** | **** |
| 29 | 12.88 | 11.99 | 11.54 | 11.10 | 10.65 | 10.18 | **** | **** | **** | **** | **** | **** |
| 30 | 12.91 | 12.03 | 11.53 | 11.06 | ------ | 10.19 | **** | **** | **** | **** | **** | **** |
| 31 | 12.82 | ------ | 11.54 | 11.06 | ------ | 10.17 | ------ | **** | ------ | **** | **** | ------ |
| MIN | 12.82 | 11.99 | 11.53 | 11.06 | 10.62 | 10.17 | **** | **** | **** | **** | **** | **** |
| MAX | 13.83 | 12.74 | 12.06 | 11.49 | 11.06 | 10.61 | **** | **** | **** | **** | **** | **** |
| MEAN | 13.24 | 12.39 | 11.77 | 11.22 | 10.86 | 10.37 | **** | **** | **** | **** | **** | **** |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 5. Groundwater level data, WY 1991-1992, Spickard observation well.

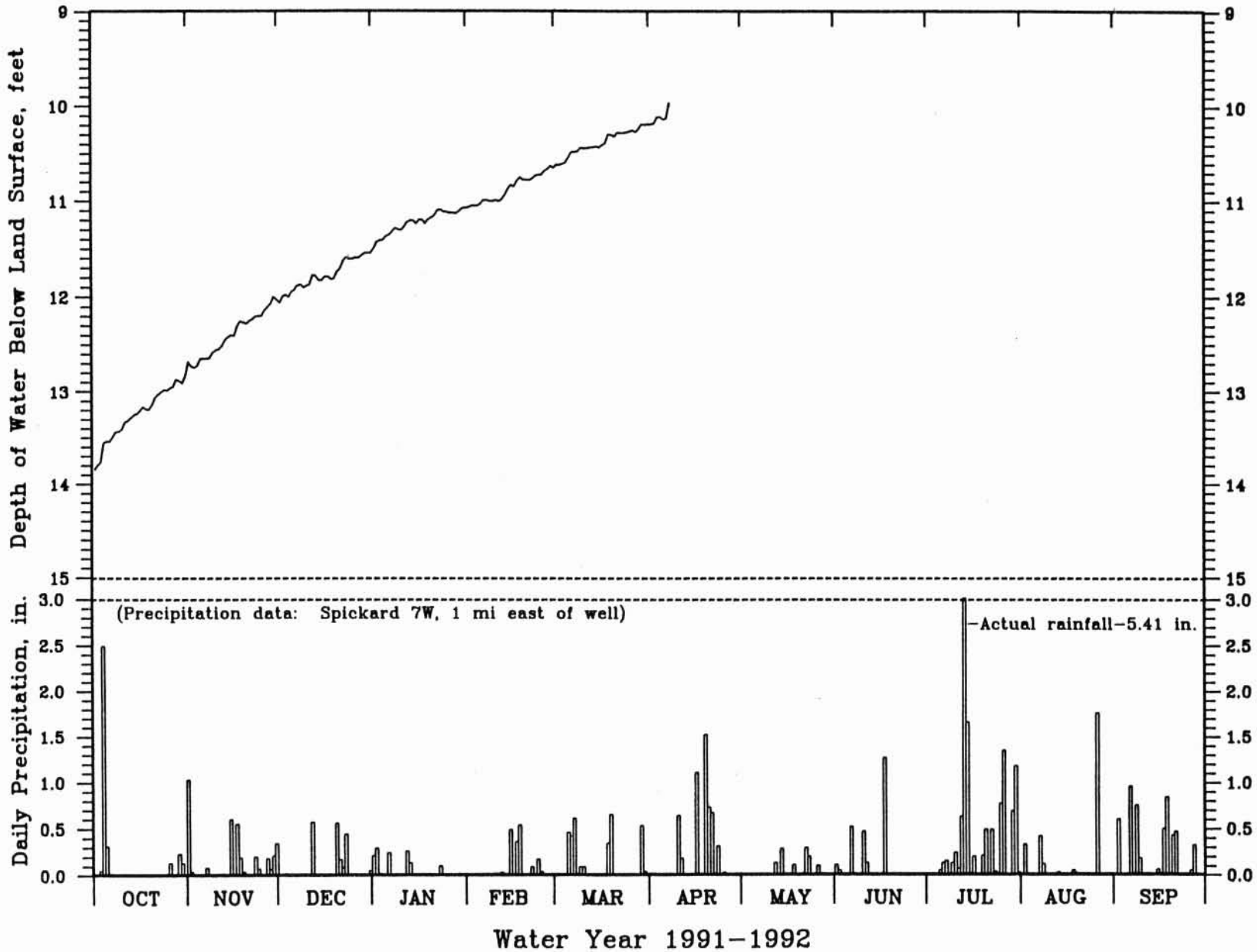



Figure 5. Water-level hydrograph and precipitation, Spickard observation well.

SCHUYLER COUNTY: SE1/4 SW1/4 SEC. 29, T. 66 N., R. 14 W. DGLS LOG NUMBER: NONE
40 DEG 34 MIN 52 SEC NORTH LATITUDE, 92 DEG 29 MIN 29 SEC WEST LONGITUDE WELL OWNER: VANDIKE FARMS
LAND SURFACE ELEVATION: 935 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.0 FOOT ABOVE LAND SURFACE
TOTAL DEPTH: 27 FEET WELL DIAMETER: 36 INCHES
CASING: BRICK LINED, NOT GROUTED
WELL PRODUCES FROM GLACIAL DRIFT
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1980, 12 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17.73 | 18.50 | 19.04 | 19.23 | 18.94 | 18.59 | 16.30 | 13.98 | 14.44 | 15.33 | 16.24 | 17.05 |
| 2 | 17.75 | 18.52 | 19.05 | 19.23 | 18.94 | 18.56 | 16.27 | 13.97 | 14.47 | 15.35 | 16.27 | 17.07 |
| 3 | 17.78 | 18.54 | 19.06 | 19.23 | 18.93 | 18.53 | 16.23 | 13.97 | 14.49 | 15.38 | 16.30 | 17.08 |
| 4 | 17.79 | 18.57 | 19.07 | 19.23 | 18.92 | 18.50 | 16.18 | 13.97 | 14.50 | 15.42 | 16.33 | 17.11 |
| 5 | 17.81 | 18.59 | 19.09 | 19.23 | 18.92 | 18.47 | 16.15 | 13.98 | 14.53 | 15.44 | 16.36 | 17.13 |
| 6 | 17.84 | 18.62 | 19.10 | 19.23 | 18.91 | 18.24 | 16.12 | 13.99 | 14.56 | 15.48 | 16.39 | 17.16 |
| 7 | 17.87 | 18.63 | 19.11 | 19.22 | 18.90 | 17.21 | 16.10 | 13.99 | 14.59 | 15.50 | 16.41 | 17.18 |
| 8 | 17.89 | 18.67 | 19.11 | 19.21 | 18.90 | 17.06 | 16.07 | 13.99 | 14.62 | 15.53 | 16.43 | 17.20 |
| 9 | 17.92 | 18.69 | 19.12 | 19.20 | 18.90 | 17.00 | 16.03 | 14.00 | 14.65 | 15.56 | 16.46 | 17.23 |
| 10 | 17.95 | 18.71 | 19.13 | 19.18 | 18.89 | 16.98 | 16.00 | 14.00 | 14.68 | 15.60 | 16.48 | 17.25 |
| 11 | 17.97 | 18.74 | 19.13 | 19.17 | 18.89 | 16.97 | 15.98 | 14.01 | 14.71 | 15.63 | 16.51 | 17.27 |
| 12 | 17.99 | 18.75 | 19.14 | 19.16 | 18.89 | 16.95 | 15.96 | 14.01 | 14.74 | 15.67 | 16.53 | 17.30 |
| 13 | 18.02 | 18.77 | 19.14 | 19.14 | 18.89 | 16.94 | 15.95 | 14.03 | 14.78 | 15.69 | 16.56 | 17.32 |
| 14 | 18.04 | 18.79 | 19.14 | 19.13 | 18.89 | 16.92 | 15.93 | 14.04 | 14.81 | 15.71 | 16.59 | 17.34 |
| 15 | 18.07 | 18.80 | 19.15 | 19.12 | 18.87 | 16.91 | 15.90 | 14.06 | 14.84 | 15.73 | 16.62 | 17.36 |
| 16 | 18.09 | 18.82 | 19.17 | 19.11 | 18.87 | 16.90 | 15.85 | 14.07 | 14.87 | 15.76 | 16.65 | 17.38 |
| 17 | 18.12 | 18.83 | 19.17 | 19.09 | 18.86 | 16.88 | 15.80 | 14.09 | 14.90 | 15.79 | 16.67 | 17.40 |
| 18 | 18.15 | 18.84 | 19.18 | 19.09 | 18.81 | 16.84 | 15.75 | 14.11 | 14.93 | 15.82 | 16.70 | 17.43 |
| 19 | 18.19 | 18.85 | 19.20 | 19.08 | 18.79 | 16.81 | 15.67 | 14.13 | 14.97 | 15.86 | 16.72 | 17.46 |
| 20 | 18.22 | 18.87 | 19.21 | 19.07 | 18.78 | 16.76 | 15.00 | 14.16 | 15.00 | 15.90 | 16.75 | 17.48 |
| 21 | 18.24 | 18.89 | 19.22 | 19.05 | 18.77 | 16.71 | 14.26 | 14.19 | 15.03 | 15.93 | 16.78 | 17.50 |
| 22 | 18.26 | 18.91 | 19.22 | 19.04 | 18.76 | 16.66 | 14.09 | 14.21 | 15.06 | 15.97 | 16.82 | 17.53 |
| 23 | 18.29 | 18.92 | 19.22 | 19.02 | 18.75 | 16.62 | 14.03 | 14.23 | 15.09 | 15.98 | 16.85 | 17.55 |
| 24 | 18.31 | 18.93 | 19.22 | 19.01 | 18.73 | 16.58 | 14.01 | 14.25 | 15.12 | 16.01 | 16.86 | 17.58 |
| 25 | 18.34 | 18.95 | 19.22 | 18.99 | 18.72 | 16.54 | 14.00 | 14.28 | 15.15 | 16.05 | 16.89 | 17.59 |
| 26 | 18.36 | 18.98 | 19.23 | 18.99 | 18.70 | 16.50 | 13.99 | 14.30 | 15.19 | 16.07 | 16.91 | 17.62 |
| 27 | 18.39 | 19.00 | 19.23 | 18.98 | 18.68 | 16.47 | 13.99 | 14.33 | 15.22 | 16.10 | 16.94 | 17.64 |
| 28 | 18.42 | 19.01 | 19.23 | 18.97 | 18.64 | 16.44 | 13.99 | 14.35 | 15.25 | 16.13 | 16.96 | 17.65 |
| 29 | 18.44 | 19.02 | 19.23 | 18.97 | 18.61 | 16.40 | 13.99 | 14.37 | 15.28 | 16.15 | 16.97 | 17.68 |
| 30 | 18.47 | 19.03 | 19.23 | 18.95 | ------ | 16.36 | 13.98 | 14.40 | 15.30 | 16.18 | 17.00 | 17.69 |
| 31 | 18.49 | ------ | 19.23 | 18.94 | ------ | 16.33 | ------ | 14.42 | ------ | 16.20 | 17.02 | ------ |
| MIN | 17.73 | 18.50 | 19.04 | 18.94 | 18.61 | 16.33 | 13.98 | 13.97 | 14.44 | 15.33 | 16.24 | 17.05 |
| MAX | 18.49 | 19.03 | 19.23 | 19.23 | 18.94 | 18.59 | 16.30 | 14.42 | 15.30 | 16.20 | 17.02 | 17.69 |
| MEAN | 18.10 | 18.79 | 19.16 | 19.11 | 18.83 | 17.08 | 15.32 | 14.13 | 14.86 | 15.77 | 16.64 | 17.37 |

1992 EXTREMES: MINIMUM - 13.97 (MAY 2), MAXIMUM - 19.23 (DEC 26), MEAN - 17.09

Table 6. Groundwater level data, WY 1991-1992, Vandike Farms observation well.

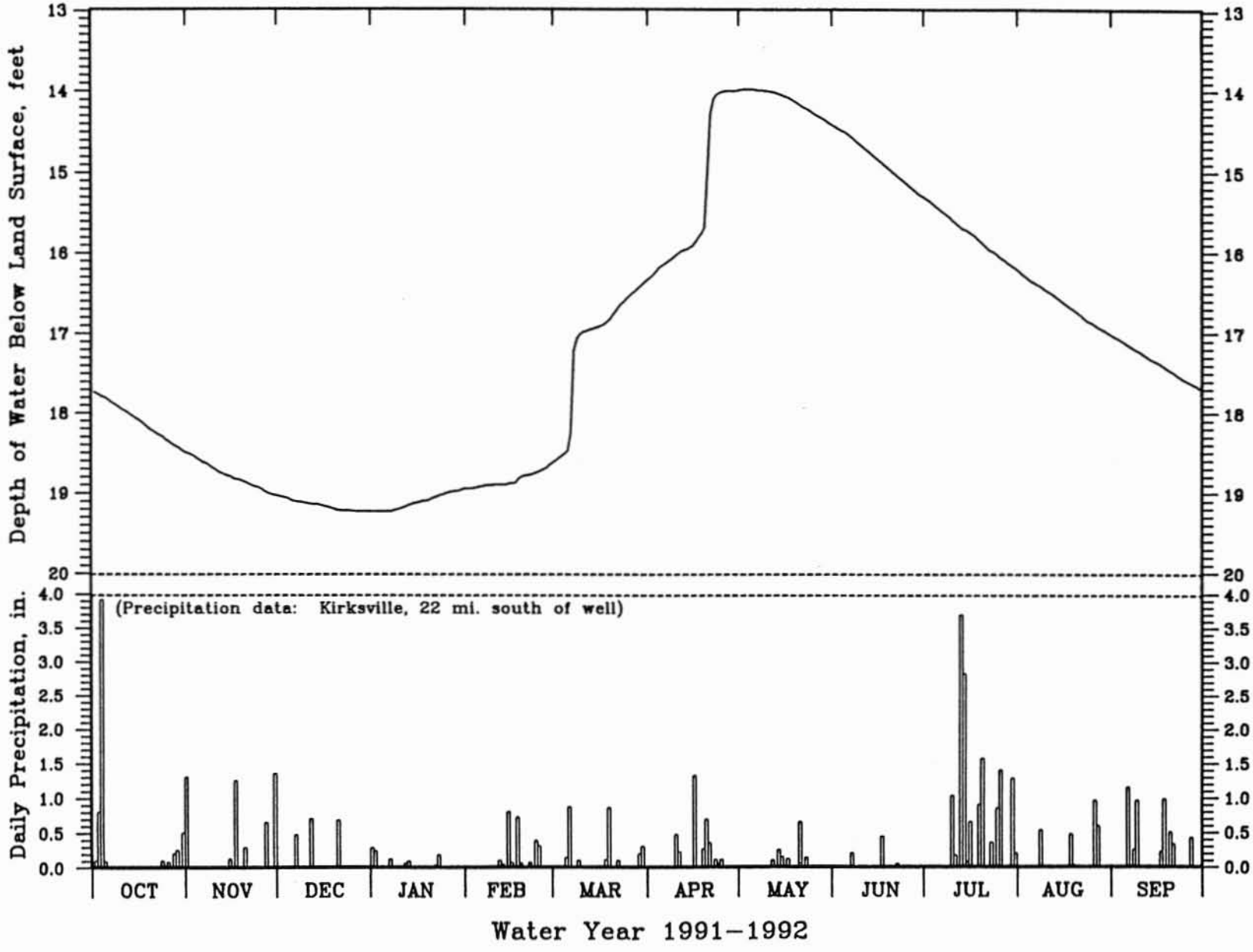



Figure 6. Water-level hydrograph and precipitation, Vandike Farms observation well.

CLARK COUNTY: NE1/4 SW1/4 SEC. 29, T. 65 N., R. 6 W. DGLS LOG NUMBER: NONE
40 DEG 23 MIN 56 SEC NORTH LATITUDE, 91 DEG 34 MIN 40 SEC WEST LONGITUDE WELL OWNER: NA
LAND SURFACE ELEVATION: 540 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 2.5 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 150-160 FEET WELL DIAMETER: NA
CASING: LENGTH AND DIAMETER NOT AVAILABLE (NOTE: **** DENOTES MISSING DATA)
WELL PRODUCES FROM GLACIAL DRIFT AND ALLUVIUM
SCREEN INFORMATION: WELL CONTAINS SCREEN BUT NO INFORMATION IS AVAILABLE
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1974, 18 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **** | **** | 46.87 | 46.31 | 47.45 | 46.92 | 45.90 | **** | **** | **** | **** | **** |
| 2 | **** | **** | 46.59 | 46.18 | 48.68 | 46.58 | 45.93 | **** | **** | **** | **** | **** |
| 3 | **** | **** | 46.60 | 46.23 | 47.01 | 46.54 | 45.88 | **** | **** | **** | **** | **** |
| 4 | **** | **** | 46.83 | 46.19 | 46.89 | 46.38 | 46.28 | **** | **** | **** | **** | **** |
| 5 | **** | **** | 46.78 | 46.38 | 46.69 | 46.39 | 46.14 | **** | **** | **** | **** | **** |
| 6 | **** | **** | 46.63 | 46.22 | 46.67 | 46.39 | 46.31 | **** | **** | **** | **** | **** |
| 7 | **** | **** | 46.55 | 46.18 | 46.62 | 46.28 | 46.18 | **** | **** | **** | **** | **** |
| 8 | **** | **** | 46.50 | 45.92 | 46.73 | 46.03 | 46.01 | **** | **** | **** | **** | **** |
| 9 | **** | **** | 46.97 | 46.25 | 46.81 | 45.96 | 46.22 | **** | **** | **** | **** | **** |
| 10 | **** | **** | 46.63 | 46.16 | 46.80 | 45.89 | 46.28 | **** | **** | **** | **** | **** |
| 11 | **** | **** | 46.49 | 46.23 | 46.74 | 45.98 | 46.34 | **** | **** | **** | **** | **** |
| 12 | **** | **** | 46.52 | 46.37 | 46.69 | 45.88 | 46.43 | **** | **** | **** | **** | **** |
| 13 | **** | 47.57 | 46.43 | 46.23 | 46.74 | 46.00 | 46.53 | **** | **** | **** | **** | **** |
| 14 | **** | 47.23 | 46.46 | 46.51 | 46.59 | 46.07 | 46.20 | **** | **** | **** | **** | **** |
| 15 | **** | 47.45 | 46.45 | 47.04 | 46.86 | 46.19 | 46.28 | **** | **** | **** | **** | **** |
| 16 | **** | 47.23 | 46.64 | 48.29 | 47.05 | 46.35 | 45.78 | **** | **** | **** | **** | **** |
| 17 | **** | 46.69 | 46.75 | **** | 46.89 | 45.93 | 46.15 | **** | **** | **** | **** | **** |
| 18 | **** | 47.29 | 46.49 | **** | 46.69 | 45.73 | 46.75 | **** | **** | **** | **** | **** |
| 19 | **** | 47.09 | 46.49 | **** | 46.87 | 45.84 | **** | **** | **** | **** | **** | **** |
| 20 | **** | 47.26 | 46.50 | **** | 46.76 | 45.75 | **** | **** | **** | **** | **** | **** |
| 21 | **** | 46.90 | 46.51 | **** | 46.55 | 45.85 | **** | **** | **** | **** | **** | **** |
| 22 | **** | 46.93 | 46.29 | **** | 46.55 | 46.25 | **** | **** | **** | **** | **** | **** |
| 23 | **** | 46.83 | 46.40 | **** | 46.60 | 46.07 | **** | **** | **** | **** | **** | **** |
| 24 | **** | 47.13 | 46.35 | **** | 46.56 | 45.75 | **** | **** | **** | **** | **** | **** |
| 25 | **** | 47.05 | 46.09 | **** | 46.54 | 45.80 | **** | **** | **** | **** | **** | **** |
| 26 | **** | 46.93 | 46.07 | **** | 46.43 | 45.78 | **** | **** | **** | **** | **** | **** |
| 27 | **** | 47.10 | 46.30 | **** | 46.31 | 46.00 | **** | **** | **** | **** | **** | **** |
| 28 | **** | 46.89 | 46.19 | **** | 46.46 | 45.87 | **** | **** | **** | **** | **** | **** |
| 29 | **** | 46.79 | 46.04 | 49.33 | 46.58 | 45.71 | **** | **** | **** | **** | **** | **** |
| 30 | **** | 46.79 | 46.61 | 49.56 | ------ | 46.05 | **** | **** | **** | **** | **** | **** |
| 31 | **** | ------ | 46.25 | 48.66 | ------ | 45.86 | ------ | **** | ------ | **** | **** | ------ |
| MIN | **** | 46.69 | 46.04 | 45.92 | 46.31 | 45.71 | 45.78 | **** | **** | **** | **** | **** |
| MAX | **** | 47.57 | 46.97 | 49.56 | 48.68 | 46.92 | 46.75 | **** | **** | **** | **** | **** |
| MEAN | **** | **** | 46.49 | **** | 46.79 | 46.07 | **** | **** | **** | **** | **** | **** |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 7. Groundwater level data, WY 1991-1992, Wayland observation well.

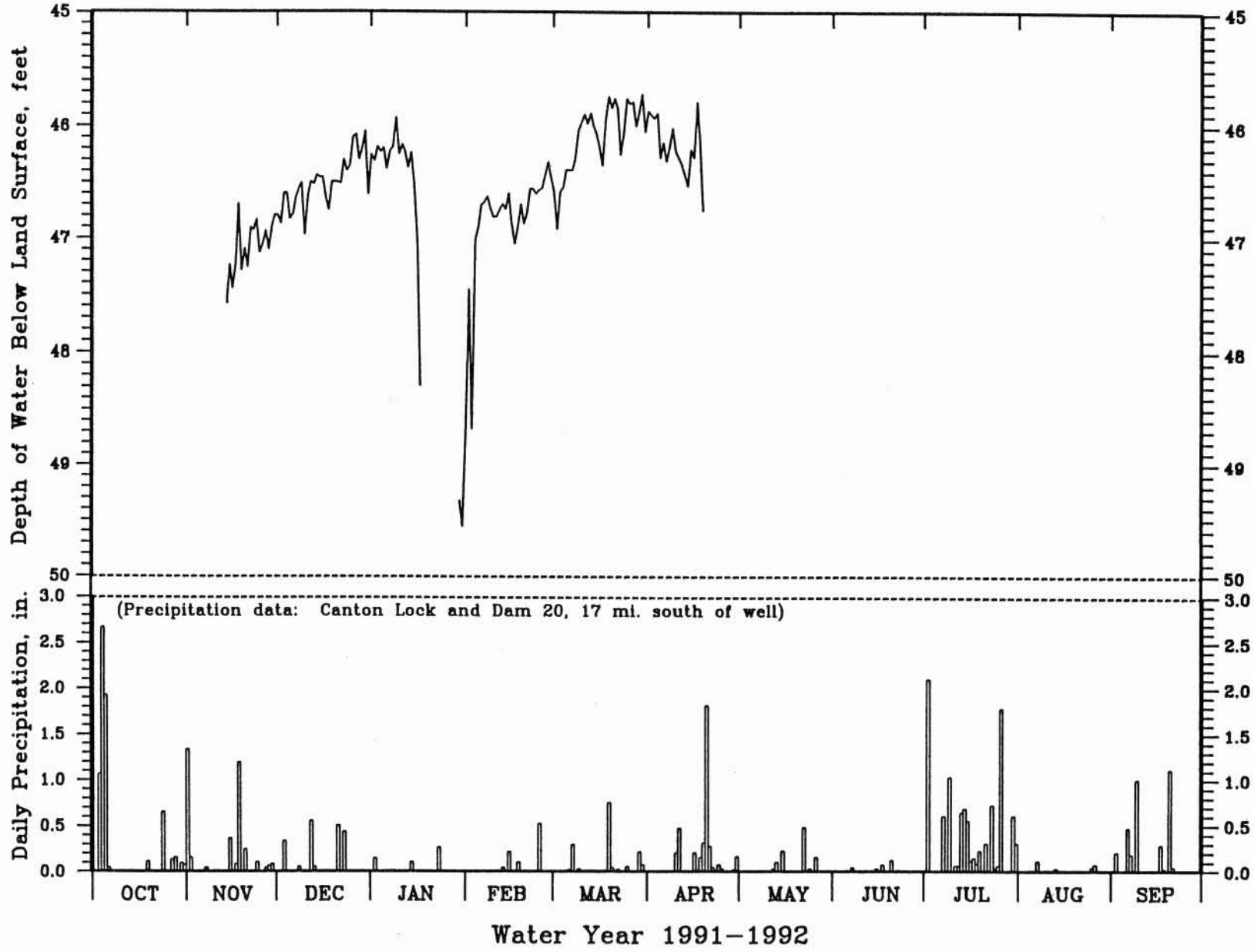



Figure 7. Water-level hydrograph and precipitation, Wayland observation well.

MARION COUNTY: NW1/4 NE1/4 SEC. 10, T. 58 N., R. 5 W. DGLS LOG NUMBER: 16183
39 DEG 50 MIN 43 SEC NORTH LATITUDE, 91 DEG 26 MIN 26 SEC WEST LONGITUDE WELL OWNER: REA POWER PLANT
LAND SURFACE ELEVATION: 480 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 9.0 FEET ABOVE LAND SURFACE (NOTE: **** DENOTES MISSING DATA)
TOTAL DEPTH: 129 FEET WELL DIAMETER: 8 INCHES
CASING: 58 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED, 23 FEET OF 4 INCH PRODUCTION CASING
WELL PRODUCES FROM THE MISSISSIPPI RIVER ALLUVIUM
SCREEN INFORMATION: WELL CONTAINS 4 FEET OF 4 INCH WELL SCREEN
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1957, 35 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32.20 | 32.93 | 28.14 | **** | 32.25 | **** | **** | **** | **** | 24.32 | 29.88 | 35.35 |
| 2 | 32.35 | 32.87 | 28.14 | **** | 32.45 | **** | **** | **** | **** | 23.97 | 30.02 | 35.30 |
| 3 | 32.66 | 33.05 | 28.14 | **** | 32.50 | **** | **** | **** | **** | 23.35 | 30.84 | 34.96 |
| 4 | 31.78 | 32.90 | 28.14 | **** | 32.62 | **** | **** | **** | **** | 23.78 | 31.60 | 34.98 |
| 5 | 32.12 | 31.71 | 29.10 | **** | 32.70 | **** | **** | **** | **** | 23.76 | 32.02 | 35.03 |
| 6 | 32.80 | 31.35 | 30.50 | **** | 32.61 | **** | **** | **** | **** | 23.60 | 32.22 | 34.68 |
| 7 | 32.77 | 31.29 | 30.77 | **** | 32.35 | **** | **** | **** | **** | 23.62 | 32.51 | 34.45 |
| 8 | 32.83 | 30.88 | 30.90 | **** | 32.15 | **** | **** | **** | **** | 22.90 | 32.88 | 34.17 |
| 9 | 32.94 | 30.65 | 29.95 | **** | 32.10 | **** | **** | **** | **** | 22.16 | 33.20 | 33.71 |
| 10 | 33.10 | 30.42 | 29.35 | **** | 32.33 | **** | **** | **** | **** | 22.45 | 33.30 | 32.05 |
| 11 | 33.40 | 30.19 | 29.17 | **** | 32.65 | **** | **** | **** | **** | 23.15 | 32.85 | 31.13 |
| 12 | 33.76 | 29.96 | 28.80 | **** | 33.10 | **** | **** | **** | **** | 23.20 | 32.93 | 31.60 |
| 13 | 33.78 | 29.73 | 28.00 | **** | 33.15 | **** | **** | **** | **** | 23.15 | 33.15 | 32.50 |
| 14 | 33.97 | 29.51 | 27.40 | **** | 32.90 | **** | **** | **** | **** | 23.55 | 33.57 | 33.70 |
| 15 | 34.00 | 29.95 | 27.30 | **** | 32.65 | **** | 30.53 | **** | **** | 23.96 | 33.80 | 33.75 |
| 16 | 33.93 | 30.47 | 27.05 | **** | 32.50 | **** | 30.41 | **** | **** | 23.96 | 33.82 | 32.70 |
| 17 | 33.96 | 30.60 | 26.95 | **** | **** | **** | 31.16 | **** | **** | 23.96 | 33.83 | 32.03 |
| 18 | 34.09 | 30.14 | 27.35 | **** | **** | **** | 29.61 | **** | **** | 26.28 | 34.01 | 32.03 |
| 19 | 34.03 | 29.65 | 27.45 | **** | **** | **** | 28.55 | **** | **** | 29.08 | 34.23 | 32.03 |
| 20 | 34.00 | 30.17 | **** | **** | **** | **** | 29.95 | **** | **** | 29.40 | 34.22 | 32.03 |
| 21 | 34.04 | 30.15 | **** | **** | **** | **** | 32.33 | **** | **** | 29.87 | 34.15 | 32.03 |
| 22 | 34.07 | 29.54 | **** | **** | **** | **** | 32.45 | **** | **** | 29.92 | 34.42 | 32.03 |
| 23 | 34.05 | 29.75 | **** | **** | **** | **** | 32.53 | **** | **** | 29.94 | 34.85 | 32.03 |
| 24 | 34.00 | 29.90 | **** | **** | **** | **** | 32.30 | **** | **** | 30.02 | 35.25 | 32.03 |
| 25 | 33.83 | 28.70 | **** | **** | **** | **** | 31.85 | **** | **** | 30.02 | 35.60 | 32.03 |
| 26 | 33.59 | 28.20 | **** | **** | **** | **** | **** | **** | **** | 29.65 | 35.23 | 32.03 |
| 27 | 33.41 | 28.22 | **** | **** | **** | **** | **** | **** | **** | 29.33 | 34.35 | 32.03 |
| 28 | 33.21 | 28.40 | **** | **** | **** | **** | **** | **** | **** | 29.70 | 34.19 | 32.03 |
| 29 | 33.50 | 28.35 | **** | 32.00 | **** | **** | **** | **** | **** | 29.96 | 35.05 | 32.03 |
| 30 | 33.45 | 28.20 | **** | 32.05 | ------ | **** | **** | **** | **** | 29.94 | 35.13 | 32.75 |
| 31 | 32.97 | ------ | **** | 32.14 | ------ | **** | ------ | **** | ------ | 29.93 | 35.30 | ------ |
| MIN | 31.78 | 28.20 | 26.95 | **** | 32.10 | **** | 28.55 | **** | **** | 22.16 | 29.88 | 31.13 |
| MAX | 34.09 | 33.05 | 30.90 | **** | 33.15 | **** | 32.53 | **** | **** | 30.02 | 35.60 | 35.35 |
| MEAN | 33.37 | 30.26 | **** | **** | **** | **** | **** | **** | **** | 26.19 | 33.50 | 32.97 |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 8. Groundwater level data, WY 1991-1992, Hannibal observation well.

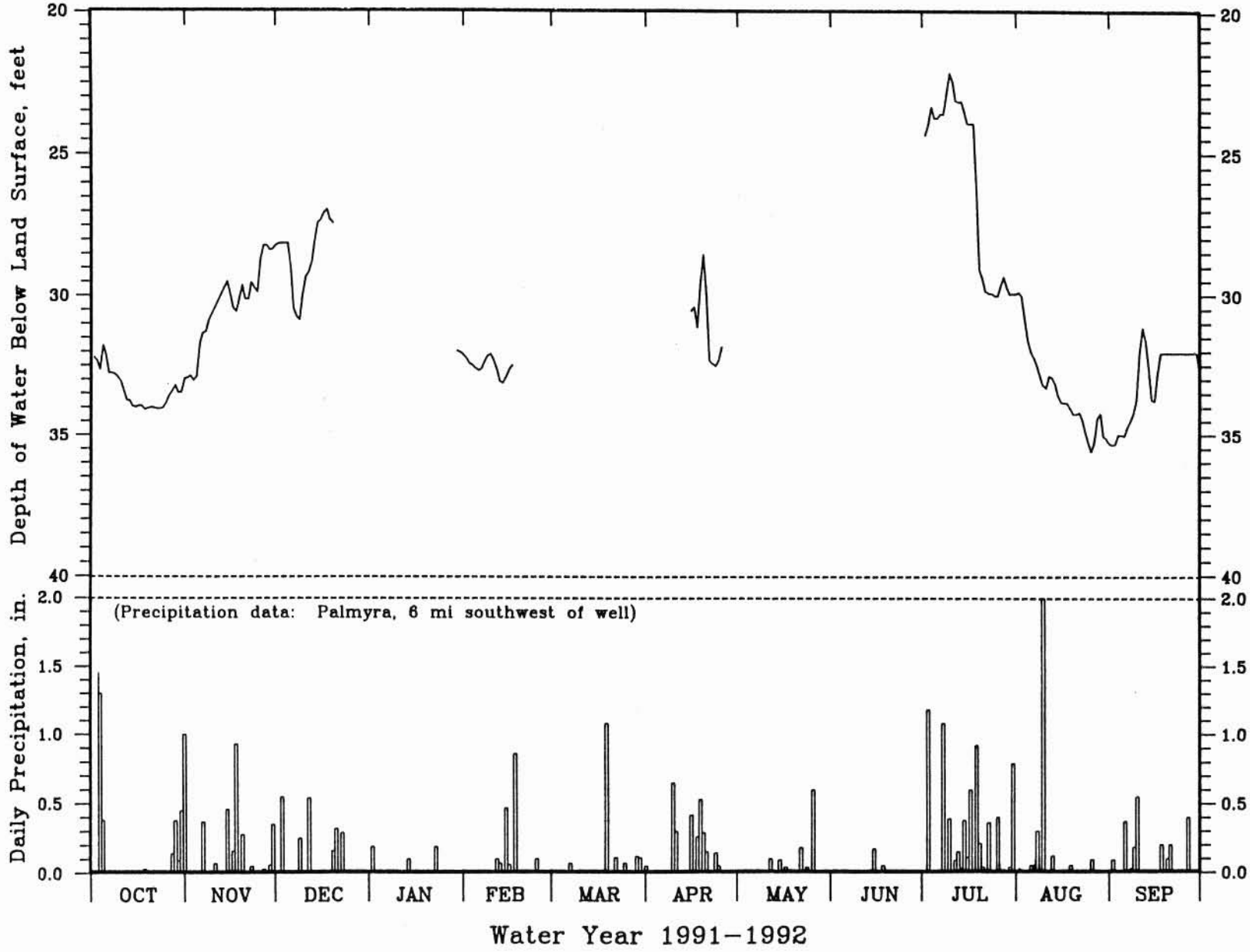



Figure 8. Water-level hydrograph and precipitation, Hannibal observation well.

COOPER COUNTY: NE1/4 NW1/4 SEC. 12, T. 49 N., R. 19 W. DGLS LOG NUMBER: NONE
39 DEG 02 MIN 07 SEC NORTH LATITUDE, 92 DEG 57 MIN 08 SEC WEST LONGITUDE WELL OWNER: RICHARD DURHAM
LAND SURFACE ELEVATION: 700 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.3 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 230 FEET WELL DIAMETER: 6 INCHES (NOTE: **** DENOTES MISSING DATA)
CASING: UNKNOWN LENGTH OF 6 INCH STEEL CASING, NOT PRESSURE GROUTED
FORMATIONS OPEN TO WELL: BURLINGTON-KEOKUK LS., SEDALIA FM., AND CHOUTEAU GP.
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1962, 30 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 59.50 | 59.92 | 58.52 | 58.52 | 58.02 | **** | **** | **** | 59.19 | 60.10 | 60.50 | 61.13 |
| 2 | 59.41 | 59.92 | 58.40 | 58.58 | 58.40 | **** | **** | **** | 59.12 | 60.01 | 60.52 | 61.18 |
| 3 | 59.37 | 59.80 | 58.20 | 58.59 | 58.81 | **** | **** | **** | 59.10 | 60.00 | 60.52 | 61.17 |
| 4 | 59.34 | 59.73 | 58.10 | 58.60 | 58.80 | **** | **** | **** | 59.22 | 60.01 | 60.49 | 61.19 |
| 5 | 59.49 | 59.71 | 58.07 | 58.69 | 58.70 | **** | **** | **** | 59.37 | 60.04 | 60.43 | 61.20 |
| 6 | 59.61 | 59.72 | 58.02 | 58.68 | 58.61 | **** | **** | **** | 59.39 | 60.14 | 60.46 | 61.09 |
| 7 | 59.58 | 59.68 | 57.93 | 58.61 | 58.74 | **** | **** | **** | 59.41 | 60.20 | 60.52 | 61.19 |
| 8 | 59.49 | 59.60 | 57.92 | 58.70 | 58.73 | **** | **** | **** | 59.47 | 60.20 | 60.57 | 61.33 |
| 9 | 59.51 | 59.90 | 57.84 | 58.81 | 58.62 | **** | **** | **** | 59.57 | 60.09 | 60.62 | 61.36 |
| 10 | 59.54 | 59.72 | 57.93 | 58.87 | 58.81 | **** | **** | **** | 59.56 | 60.10 | 60.68 | 61.29 |
| 11 | 59.46 | 59.65 | 58.02 | 58.88 | 58.87 | **** | **** | 58.22 | 59.52 | 60.11 | 60.72 | 61.26 |
| 12 | 59.48 | 59.70 | 57.93 | 58.91 | 58.88 | **** | **** | 58.31 | 59.54 | 60.14 | 60.77 | 61.29 |
| 13 | 59.49 | 59.63 | 57.76 | 58.86 | 58.93 | **** | **** | 58.52 | 59.60 | 60.22 | 60.79 | 61.33 |
| 14 | 59.48 | 59.50 | 57.78 | 58.81 | 58.98 | **** | **** | 58.51 | 59.53 | 60.31 | 60.78 | 61.29 |
| 15 | 59.51 | 59.40 | 57.88 | 58.62 | 59.11 | **** | **** | 58.60 | 59.60 | 60.39 | 60.79 | 61.23 |
| 16 | 59.52 | 59.53 | 58.15 | 58.70 | 59.07 | **** | **** | 58.67 | 59.68 | 60.40 | 60.79 | 61.35 |
| 17 | 59.49 | 59.80 | 58.00 | 58.84 | 58.92 | **** | **** | 58.79 | 59.73 | 60.40 | 60.81 | 61.21 |
| 18 | 59.58 | 59.80 | 58.10 | 58.70 | 58.88 | **** | **** | 58.93 | 59.82 | 60.47 | 60.83 | 60.92 |
| 19 | 59.71 | 59.79 | 58.24 | 58.65 | **** | **** | **** | 58.92 | 59.82 | 60.43 | 60.88 | 61.12 |
| 20 | 59.66 | 59.70 | 58.18 | 58.77 | **** | **** | **** | 58.93 | 59.73 | 60.42 | 60.87 | 61.40 |
| 21 | 59.56 | 59.68 | 58.16 | 58.63 | **** | **** | **** | 58.94 | 59.64 | 60.45 | 60.88 | 61.44 |
| 22 | 59.50 | 59.44 | 58.10 | 58.50 | **** | **** | **** | 58.96 | 59.66 | 60.46 | 60.90 | 61.30 |
| 23 | 59.49 | 59.15 | 57.94 | 58.32 | **** | **** | **** | 59.05 | 59.74 | 60.40 | 60.91 | 61.22 |
| 24 | 59.50 | 59.20 | 58.05 | 58.22 | **** | **** | **** | 59.09 | 59.85 | 60.39 | 60.95 | 61.30 |
| 25 | 59.57 | 59.26 | 58.21 | 58.23 | **** | **** | **** | 59.02 | 59.89 | 60.42 | 60.96 | 61.43 |
| 26 | 59.57 | 59.20 | 58.40 | 58.25 | **** | **** | **** | 59.00 | 59.87 | 60.41 | 60.97 | 61.59 |
| 27 | 59.60 | 59.13 | 58.50 | 58.15 | **** | **** | **** | 59.04 | 59.87 | 60.36 | 60.99 | 61.60 |
| 28 | 59.46 | 58.90 | 58.52 | 58.10 | **** | **** | **** | 59.09 | 59.86 | 60.43 | 61.02 | 61.59 |
| 29 | 59.70 | 58.62 | 58.60 | 58.02 | **** | **** | **** | 59.10 | 59.84 | 60.52 | 61.03 | 61.58 |
| 30 | 59.90 | 58.53 | 58.52 | 58.15 | ------ | **** | **** | 59.11 | 59.95 | 60.49 | 61.01 | 61.58 |
| 31 | 59.90 | ------ | 58.44 | 58.07 | ------ | **** | ------ | 59.13 | ------ | 60.44 | 61.01 | ------ |
| MIN | 59.34 | 58.53 | 57.76 | 58.02 | 58.02 | **** | **** | 58.22 | 59.10 | 60.00 | 60.43 | 60.92 |
| MAX | 59.90 | 59.92 | 58.60 | 58.91 | 59.11 | **** | **** | 59.13 | 59.95 | 60.52 | 61.03 | 61.60 |
| MEAN | 59.55 | 59.51 | 58.14 | 58.55 | **** | **** | **** | **** | 59.60 | 60.29 | 60.77 | 61.31 |

1992 EXTREMES: MINIMUM - 57.76 (DEC 13), MAXIMUM - 61.60 (SEP 27), MEAN - ****

Table 9. Groundwater level data, WY 1991-1992, Arrow Rock observation well.

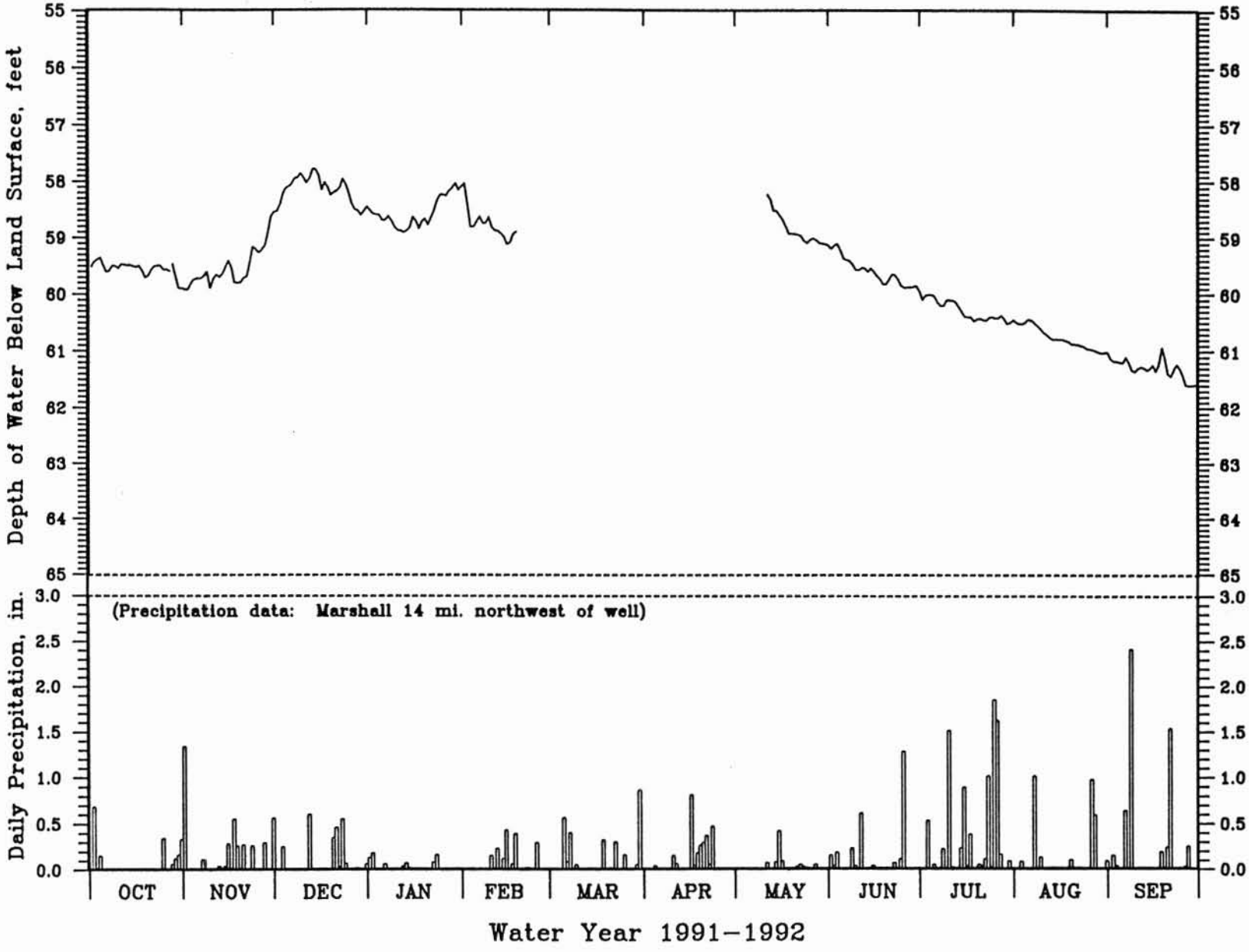



Figure 9. Water-level hydrograph and precipitation, Arrow Rock observation well.

CALLAWAY COUNTY: SW1/4 SW1/4 SEC. 10, T. 44 N., R. 11 W. DGLS LOG NUMBER: 14453
38 DEG 35 MIN 50 SEC NORTH LATITUDE, 92 DEG 09 MIN 42 SEC WEST LONGITUDE WELL OWNER: NA
LAND SURFACE ELEVATION: 550.7 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 10 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 99 FEET WELL DIAMETER: 8 INCHES
CASING: 60 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED, 4 INCH STEEL PRODUCTION CASING FROM 60 TO 91 FEET
WELL PRODUCES FROM THE MISSOURI RIVER ALLUVIUM
SCREEN INFORMATION: WELL CONTAINS 4 FEET OF 4 INCH WIRE-WOUND STAINLESS STEEL WELL SCREEN
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1980, 12 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 27.97 | 28.44 | 29.05 | 29.48 | 29.96 | 29.97 | 29.60 | 28.62 | 28.37 | 28.29 | 27.39 | 26.73 |
| 2 | 27.99 | 28.49 | 29.06 | 29.49 | 29.98 | 29.96 | 29.57 | 28.59 | 28.37 | 28.30 | 27.31 | 26.76 |
| 3 | 28.00 | 28.49 | 29.09 | 29.51 | 29.99 | 29.96 | 29.52 | 28.56 | 28.37 | 28.33 | 27.21 | 26.81 |
| 4 | 28.02 | 28.50 | 29.12 | 29.53 | 30.01 | 29.96 | 29.50 | 28.52 | 28.36 | 28.33 | 27.13 | 26.83 |
| 5 | 28.05 | 28.49 | 29.12 | 29.55 | 30.03 | 29.96 | 29.48 | 28.50 | 28.36 | 28.33 | 27.06 | 26.84 |
| 6 | 28.07 | 28.52 | 29.14 | 29.57 | 30.04 | 29.96 | 29.45 | 28.48 | 28.36 | 28.34 | 27.04 | 26.86 |
| 7 | 28.08 | 28.55 | 29.15 | 29.58 | 30.06 | 29.98 | 29.42 | 28.46 | 28.36 | 28.35 | 26.98 | 26.86 |
| 8 | 28.09 | 28.56 | 29.18 | 29.59 | 30.08 | 29.99 | 29.41 | 28.44 | 28.35 | 28.36 | 26.89 | 26.86 |
| 9 | 28.10 | 28.57 | 29.21 | 29.62 | 30.10 | 30.00 | 29.39 | 28.42 | 28.35 | 28.38 | 26.85 | 26.81 |
| 10 | 28.11 | 28.59 | 29.23 | 29.63 | 30.11 | 30.02 | 29.37 | 28.42 | 28.35 | 28.38 | 26.81 | 26.82 |
| 11 | 28.11 | 28.61 | 29.25 | 29.64 | 30.13 | 30.01 | 29.36 | 28.41 | 28.35 | 28.36 | 26.78 | 26.80 |
| 12 | 28.14 | 28.63 | 29.27 | 29.65 | 30.14 | 30.00 | 29.35 | 28.40 | 28.35 | 28.33 | 26.75 | 26.75 |
| 13 | 28.15 | 28.65 | 29.29 | 29.66 | 30.15 | 29.98 | 29.33 | 28.40 | 28.35 | 28.32 | 26.72 | 26.72 |
| 14 | 28.17 | 28.67 | 29.33 | 29.68 | 30.13 | 29.98 | 29.32 | 28.40 | 28.35 | 28.30 | 26.69 | 26.72 |
| 15 | 28.19 | 28.71 | 29.35 | 29.69 | 30.15 | 29.98 | 29.30 | 28.40 | 28.35 | 28.29 | 26.67 | 26.73 |
| 16 | 28.21 | 28.74 | 29.36 | 29.70 | 30.16 | 29.96 | 29.28 | 28.40 | 28.35 | 28.26 | 26.64 | 26.74 |
| 17 | 28.22 | 28.73 | 29.39 | 29.73 | 30.14 | 29.96 | 29.26 | 28.41 | 28.34 | 28.23 | 26.62 | 26.74 |
| 18 | 28.25 | 28.75 | 29.42 | 29.75 | 30.14 | 29.94 | 29.24 | 28.41 | 28.35 | 28.18 | 26.61 | 26.76 |
| 19 | 28.28 | 28.78 | 29.44 | 29.75 | 30.14 | 29.94 | 29.21 | 28.40 | 28.36 | 28.14 | 26.60 | 26.76 |
| 20 | 28.29 | 28.80 | 29.43 | 29.77 | 30.13 | 29.93 | 29.19 | 28.40 | 28.37 | 28.09 | 26.59 | 26.69 |
| 21 | 28.30 | 28.82 | 29.44 | 29.78 | 30.11 | 29.91 | 29.17 | 28.41 | 28.37 | 28.03 | 26.59 | 26.65 |
| 22 | 28.32 | 28.83 | 29.43 | 29.79 | 30.09 | 29.90 | 29.14 | 28.41 | 28.35 | 27.98 | 26.59 | 26.65 |
| 23 | 28.33 | 28.86 | 29.44 | 29.81 | 30.07 | 29.87 | 29.11 | 28.41 | 28.32 | 27.93 | 26.59 | 26.62 |
| 24 | 28.35 | 28.88 | 29.46 | 29.83 | 30.05 | 29.84 | 29.06 | 28.40 | 28.31 | 27.88 | 26.60 | 26.57 |
| 25 | 28.38 | 28.91 | 29.46 | 29.84 | 30.03 | 29.81 | 29.01 | 28.39 | 28.30 | 27.83 | 26.61 | 26.55 |
| 26 | 28.39 | 28.93 | 29.46 | 29.86 | 30.01 | 29.78 | 28.95 | 28.38 | 28.30 | 27.78 | 26.63 | 26.55 |
| 27 | 28.42 | 28.95 | 29.47 | 29.88 | 30.00 | 29.76 | 28.88 | 28.38 | 28.30 | 27.73 | 26.65 | 26.57 |
| 28 | 28.42 | 28.96 | 29.46 | 29.90 | 29.98 | 29.73 | 28.81 | 28.37 | 28.29 | 27.67 | 26.68 | 26.59 |
| 29 | 28.45 | 28.98 | 29.46 | 29.92 | 29.98 | 29.69 | 28.74 | 28.36 | 28.29 | 27.61 | 26.69 | 26.62 |
| 30 | 28.46 | 29.03 | 29.47 | 29.93 | ------ | 29.66 | 28.68 | 28.37 | 28.29 | 27.54 | 26.71 | 26.63 |
| 31 | 28.45 | ------ | 29.48 | 29.95 | ------ | 29.63 | ------ | 28.37 | ------ | 27.46 | 26.71 | ------ |
| MIN | 27.97 | 28.44 | 29.05 | 29.48 | 29.96 | 29.63 | 28.68 | 28.36 | 28.29 | 27.46 | 26.59 | 26.55 |
| MAX | 28.46 | 29.03 | 29.48 | 29.95 | 30.16 | 30.02 | 29.60 | 28.62 | 28.37 | 28.38 | 27.39 | 26.86 |
| MEAN | 28.22 | 28.71 | 29.32 | 29.71 | 30.07 | 29.90 | 29.24 | 28.43 | 28.34 | 28.11 | 26.79 | 26.72 |

1992 EXTREMES: MINIMUM - 26.55 (SEP 25), MAXIMUM - 30.16 (FEB 16), MEAN - 28.63

Table 10. Groundwater level data, WY 1991-1992, Jefferson City observation well.

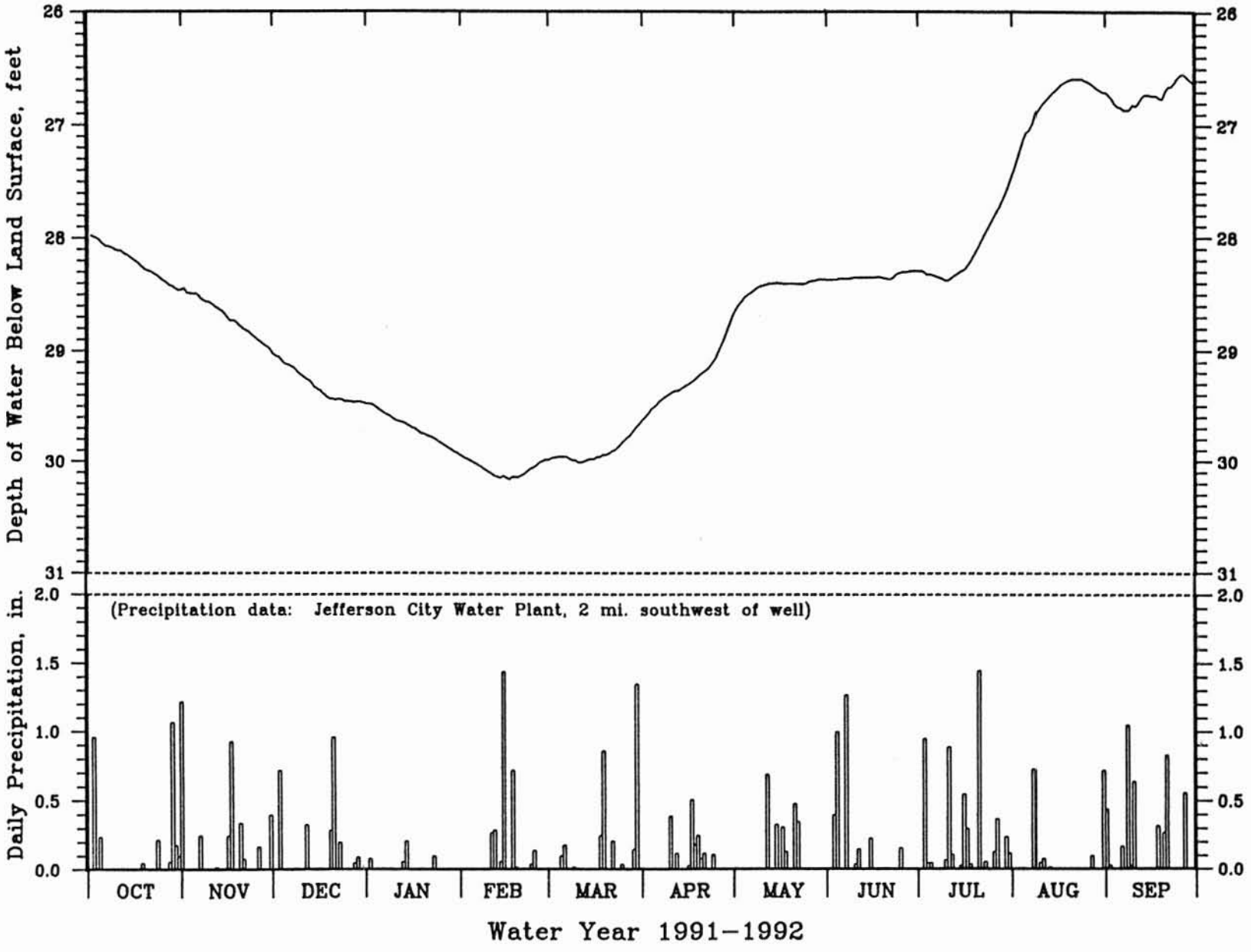



Figure 10. Water-level hydrograph and precipitation, Jefferson City observation well.

AUDRAIN COUNTY: SE1/4 SE1/4 SEC. 5, T. 52 N., R. 5 W. DGLS LOG NUMBER: 5230
39 DEG 18 MIN 25 SEC NORTH LATITUDE, 91 DEG 28 MIN 50 SEC WEST LONGITUDE WELL OWNER: CITY OF VANDALIA
LAND SURFACE ELEVATION: 765 FEET ABOVE MEAN SEA LEVEL. (WELL # 3)
MEASURING POINT IS BASE OF RECORDER BOX, 1.6 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 700 FEET WELL DIAMETER: 10 INCHES (NOTE: **** DENOTES MISSING DATA. FLOAT HUNG FROM
CASING: 425 FEET OF 10 INCH STEEL CASING, PRESSURE GROUTED JUN 6 THROUGH SEP 30)
FORMATIONS OPEN TO WELL: KIMMSWICK FM., DECORAH FM., PLATTIN FM., JOACHIM DOL., AND ST. PETER SANDSTONE
TYPE OF INSTALLATION: STEVENS 7000 SERIES DIGITAL RECORDER (1990), graphic recorder installed in 1977, 15 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 189.10 | 192.54 | 186.37 | 187.15 | 186.09 | 185.87 | 188.28 | 191.54 | 191.76 | 192.38 | 192.38 | 192.39 |
| 2 | 188.61 | 192.86 | 186.26 | 187.07 | 186.08 | 185.87 | 187.93 | 191.55 | 191.76 | 192.38 | 192.38 | 192.39 |
| 3 | 188.38 | 192.26 | 186.50 | 187.04 | 185.93 | 185.78 | 187.63 | 191.55 | 192.05 | 192.38 | 192.38 | 192.39 |
| 4 | 188.24 | 191.41 | 186.75 | 187.24 | 183.37 | 185.86 | 187.74 | 191.53 | 192.20 | 192.38 | 192.38 | 192.39 |
| 5 | 188.71 | 190.44 | 186.64 | 187.22 | 185.99 | 197.06 | 187.93 | 191.66 | 192.29 | 192.38 | 192.38 | 192.39 |
| 6 | 188.46 | 189.79 | 186.76 | 187.41 | 186.13 | 200.07 | 188.08 | 191.68 | 192.38 | 192.38 | 192.38 | 192.39 |
| 7 | 188.52 | 189.37 | 186.67 | 187.49 | 186.17 | 197.13 | 188.57 | 191.70 | 192.38 | 192.38 | 192.38 | 192.39 |
| 8 | 188.19 | 188.87 | 186.65 | 187.30 | 186.21 | 199.82 | 191.55 | 191.62 | 192.38 | 192.38 | 192.38 | 192.39 |
| 9 | 188.15 | 188.21 | 187.09 | 187.36 | 186.07 | 197.17 | 192.81 | 191.74 | 192.38 | 192.38 | 192.38 | 192.39 |
| 10 | 188.14 | 187.98 | 187.12 | 185.77 | 186.11 | 195.52 | 195.29 | 191.82 | 192.38 | 192.38 | 192.38 | 192.39 |
| 11 | 187.75 | 187.80 | 187.03 | 186.67 | 186.24 | 194.43 | 195.15 | 191.74 | 192.38 | 192.38 | 192.38 | 192.39 |
| 12 | 187.94 | 187.45 | 186.79 | 186.17 | 186.14 | 194.14 | 195.15 | 191.74 | 192.38 | 192.38 | 192.38 | 192.39 |
| 13 | 187.97 | 187.34 | 187.44 | 186.13 | 185.84 | 193.69 | 195.15 | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 14 | 187.88 | 187.23 | 187.51 | 185.96 | 185.83 | 192.22 | 195.15 | 191.76 | 192.38 | 192.38 | 192.39 | 190.72 |
| 15 | 188.13 | 187.39 | 187.26 | 186.11 | 185.85 | 193.89 | **** | 191.75 | 192.38 | 192.38 | 192.39 | 192.39 |
| 16 | 186.64 | 187.44 | 186.97 | 185.96 | 185.87 | 193.32 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 17 | 187.93 | 185.74 | 186.90 | 185.93 | 185.66 | 192.79 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 18 | 188.23 | 187.01 | 185.75 | 186.13 | 185.54 | 192.13 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 19 | 188.93 | 187.10 | 186.98 | 186.11 | 185.84 | 191.75 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 20 | 190.87 | 187.13 | 186.97 | 186.20 | 185.76 | 191.41 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 21 | 193.13 | 187.12 | 187.06 | 185.98 | 185.72 | 190.97 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 22 | 192.75 | 186.98 | 186.98 | 186.05 | 185.63 | 190.57 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 23 | 195.45 | 187.09 | 186.98 | 186.20 | 185.63 | 190.03 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 24 | 198.29 | 187.14 | 187.20 | 186.21 | 185.85 | 189.61 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 25 | 193.39 | 187.31 | 187.07 | 185.91 | 186.06 | 189.33 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 26 | 192.67 | 186.80 | 187.17 | 185.92 | 185.89 | 189.04 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 27 | 192.75 | 184.87 | 187.32 | 185.90 | 185.73 | 188.85 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 28 | 192.33 | 186.11 | 187.17 | 185.94 | 185.71 | 188.61 | **** | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 29 | 192.86 | 186.00 | 187.00 | 185.82 | 186.01 | 188.32 | 191.78 | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 30 | 192.68 | 186.22 | 187.18 | 185.88 | ------ | 188.24 | 191.80 | 191.76 | 192.38 | 192.38 | 192.39 | 192.39 |
| 31 | 192.93 | ------ | 187.26 | 185.95 | ------ | 188.18 | ------ | 191.76 | ------ | 192.38 | 192.39 | ------ |
| MIN | 186.64 | 184.87 | 185.75 | 185.77 | 183.37 | 185.78 | **** | 191.53 | 191.76 | 192.38 | 192.38 | 190.72 |
| MAX | 198.29 | 192.86 | 187.51 | 187.49 | 186.24 | 200.07 | **** | 191.82 | 192.38 | 192.38 | 192.39 | 192.39 |
| MEAN | 190.19 | 188.03 | 186.93 | 186.39 | 185.83 | 191.67 | **** | 191.72 | 192.32 | 192.38 | 192.39 | 192.33 |

1992 EXTREMES: MINIMUM - 183.37 (FEB 4), MAXIMUM - 200.07 (MAR 6), MEAN - ****

Table 11. Groundwater level data, WY 1991-1992, Vandalia observation well.

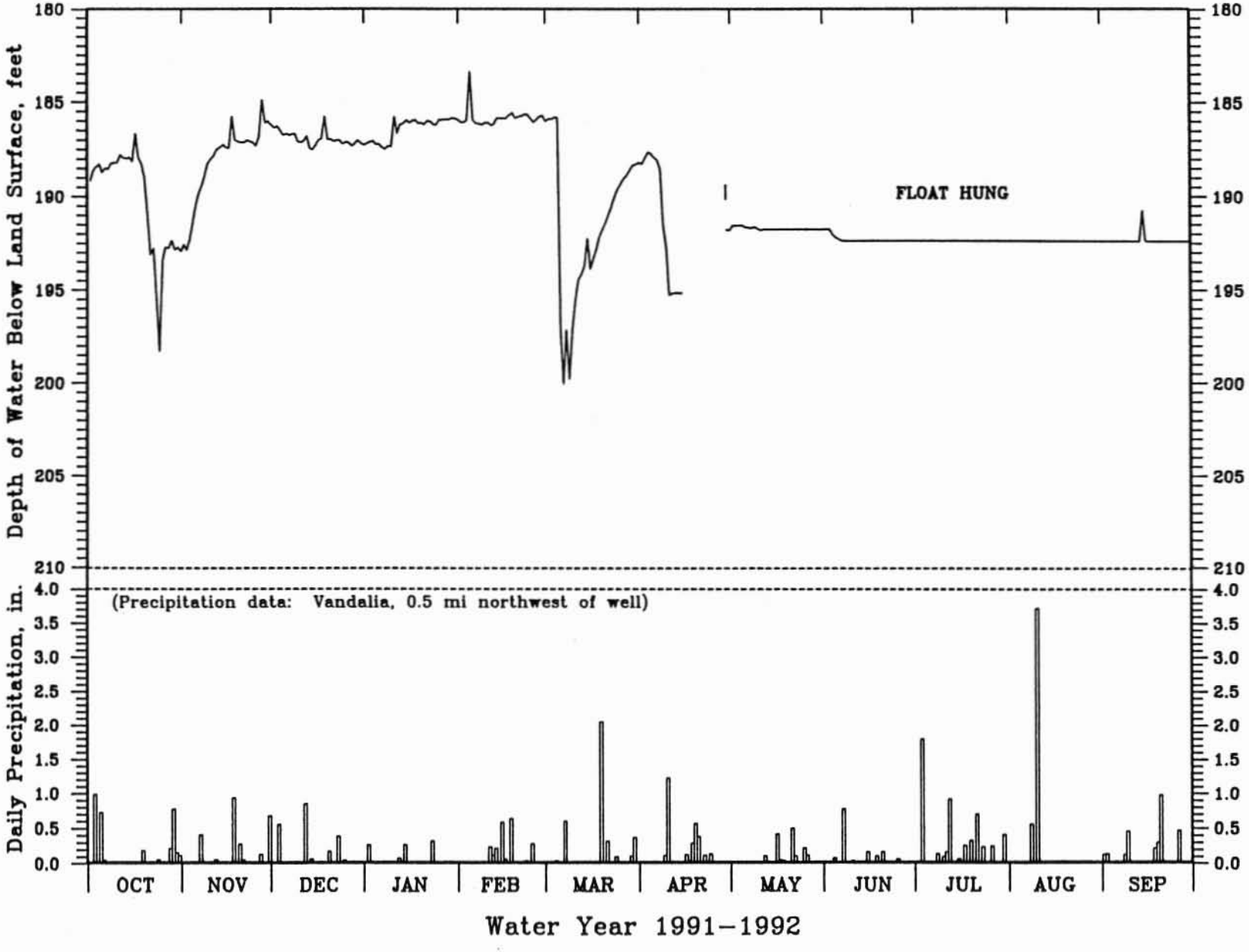



Figure 11. Water-level hydrograph and precipitation, Vandalia observation well.

AUDRAIN COUNTY: SW1/4 SW1/4 SEC. 25, T. 51 N., R. 7 W. DGLS LOG NUMBER: NONE
39 DEG 09 MIN 50 SEC NORTH LATITUDE, 91 DEG 38 MIN 48 SEC WEST LONGITUDE WELL OWNER: LADDONIA R-6 SCHOOL
LAND SURFACE ELEVATION: 795 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OR RECORDER PLATFORM, AT LAND SURFACE (NOTE: **** DENOTES MISSING DATA, FLOAT
TOTAL DEPTH: 650 FEET +- WELL DIAMETER: 6 INCHES HUNG FROM MAY 22 TO JUL 4)
CASING: 200-250 FEET OF 6 INCH STEEL CASING, GROUTING UNKNOWN
FORMATIONS OPEN TO WELL: BURLINGTON-KEOKUK LS., CHOUTEAU GP., DEVONIAN (UNDIFFERENTIATED)., KIMMSWICK FM., DECORAH FM., PLATTIN FM., JOACHIM DOL., AND ST. PETER SS.
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1990), GRAPHIC RECORDER INSTALLED IN 1981, 11 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 228.97 | 227.35 | 226.65 | 225.63 | 224.69 | 223.84 | 223.24 | 222.36 | 221.84 | 221.84 | **** | **** |
| 2 | 228.83 | 227.72 | 226.53 | 225.46 | 224.64 | 223.81 | 223.24 | 222.37 | 221.84 | 221.84 | **** | **** |
| 3 | 228.79 | 227.91 | 226.42 | 225.43 | 224.62 | 223.81 | 223.12 | 222.41 | 221.84 | 221.84 | **** | **** |
| 4 | 228.63 | 227.90 | 226.52 | 225.43 | 224.63 | 223.81 | 222.82 | 222.58 | 221.84 | 221.84 | **** | **** |
| 5 | 228.69 | 227.69 | 226.50 | 225.35 | 224.63 | 223.65 | 222.90 | 222.52 | 221.84 | **** | **** | **** |
| 6 | 228.84 | 227.63 | 226.47 | 225.24 | 224.46 | 223.52 | 222.91 | 222.33 | 221.84 | **** | **** | **** |
| 7 | 228.88 | 227.69 | 226.27 | 225.25 | 224.42 | 223.51 | 222.91 | 222.37 | 221.84 | **** | **** | **** |
| 8 | 228.83 | 227.71 | 226.14 | 225.23 | 224.45 | 223.51 | 222.91 | 222.49 | 221.84 | **** | **** | **** |
| 9 | 228.83 | 227.69 | 226.12 | 225.22 | 224.49 | 223.43 | 222.91 | 222.55 | 221.84 | **** | **** | **** |
| 10 | 228.83 | 227.56 | 226.31 | 225.26 | 224.49 | 223.47 | 222.91 | 222.55 | 221.84 | **** | **** | **** |
| 11 | 228.49 | 227.42 | 226.30 | 225.25 | 224.51 | 223.52 | 222.89 | 222.55 | 221.84 | **** | **** | **** |
| 12 | 228.44 | 227.43 | 225.98 | 225.02 | 224.50 | 223.50 | 223.16 | 222.71 | 221.84 | **** | **** | **** |
| 13 | 228.44 | 227.30 | 225.92 | 225.01 | 224.43 | 223.52 | 223.25 | 222.64 | 221.84 | **** | **** | **** |
| 14 | 228.41 | 227.13 | 226.11 | 225.02 | 224.21 | 223.50 | 223.16 | 222.48 | 221.84 | **** | **** | **** |
| 15 | 228.41 | 227.03 | 226.14 | 225.13 | 223.93 | 223.50 | 222.93 | 222.40 | 221.84 | **** | **** | **** |
| 16 | 228.42 | 227.10 | 226.12 | 225.17 | 224.13 | 223.48 | 222.84 | 222.40 | 221.84 | **** | **** | **** |
| 17 | 228.41 | 226.98 | 226.09 | 225.05 | 224.01 | 223.43 | 222.84 | 222.39 | 221.84 | **** | **** | **** |
| 18 | 228.44 | 226.83 | 226.26 | 225.13 | 223.84 | 223.32 | 222.66 | 222.32 | 221.84 | **** | **** | **** |
| 19 | 228.51 | 226.83 | 226.33 | 225.09 | 224.02 | 223.41 | 222.57 | 222.46 | 221.84 | **** | **** | **** |
| 20 | 228.47 | 226.85 | 226.28 | 225.01 | 224.13 | 223.55 | 222.41 | 222.55 | 221.84 | **** | **** | **** |
| 21 | 228.23 | 226.89 | 226.22 | 224.98 | 224.12 | 223.43 | 222.42 | 222.07 | 221.84 | **** | **** | **** |
| 22 | 228.16 | 226.89 | 225.83 | 224.78 | 224.10 | 223.23 | 222.48 | 221.84 | 221.84 | **** | **** | **** |
| 23 | 228.03 | 226.89 | 225.63 | 224.63 | 224.02 | 223.26 | 222.52 | 221.84 | 221.84 | **** | **** | **** |
| 24 | 228.03 | 226.89 | 225.71 | 224.71 | 224.02 | 223.31 | 222.52 | 221.84 | 221.84 | **** | **** | **** |
| 25 | 228.04 | 226.89 | 225.71 | 224.77 | 224.03 | 223.32 | 222.53 | 221.84 | 221.84 | **** | **** | **** |
| 26 | 228.04 | 226.88 | 225.71 | 224.93 | 224.03 | 223.30 | 222.53 | 221.84 | 221.84 | **** | **** | **** |
| 27 | 228.03 | 226.85 | 225.71 | 224.90 | 223.85 | 223.32 | 222.53 | 221.84 | 221.84 | **** | **** | **** |
| 28 | 227.89 | 226.75 | 225.68 | 224.90 | 223.71 | 223.32 | 222.53 | 221.84 | 221.84 | **** | **** | **** |
| 29 | 227.84 | 226.51 | 225.63 | 224.88 | 223.84 | 223.25 | 222.53 | 221.84 | 221.84 | **** | **** | **** |
| 30 | 228.04 | 226.37 | 225.63 | 224.76 | ------ | 223.23 | 222.52 | 221.84 | 221.84 | **** | **** | **** |
| 31 | 227.89 | ------ | 225.64 | 224.65 | ------ | 223.24 | ------ | 221.84 | ------ | **** | **** | ------ |
| MIN | 227.84 | 226.37 | 225.63 | 224.63 | 223.71 | 223.23 | 222.41 | 221.84 | 221.84 | **** | **** | **** |
| MAX | 228.97 | 227.91 | 226.65 | 225.63 | 224.69 | 223.84 | 223.25 | 222.71 | 221.84 | **** | **** | **** |
| MEAN | 228.41 | 227.19 | 226.08 | 225.07 | 224.24 | 223.46 | 222.79 | 222.25 | 221.84 | **** | **** | **** |

1992 EXTREMES: MINIMUM - 221.84 (MAY 22), MAXIMUM - 228.97 (OCT 1), MEAN - ****

Table 12. Groundwater level data, WY 1991-1992, Scotts Corner observation well.

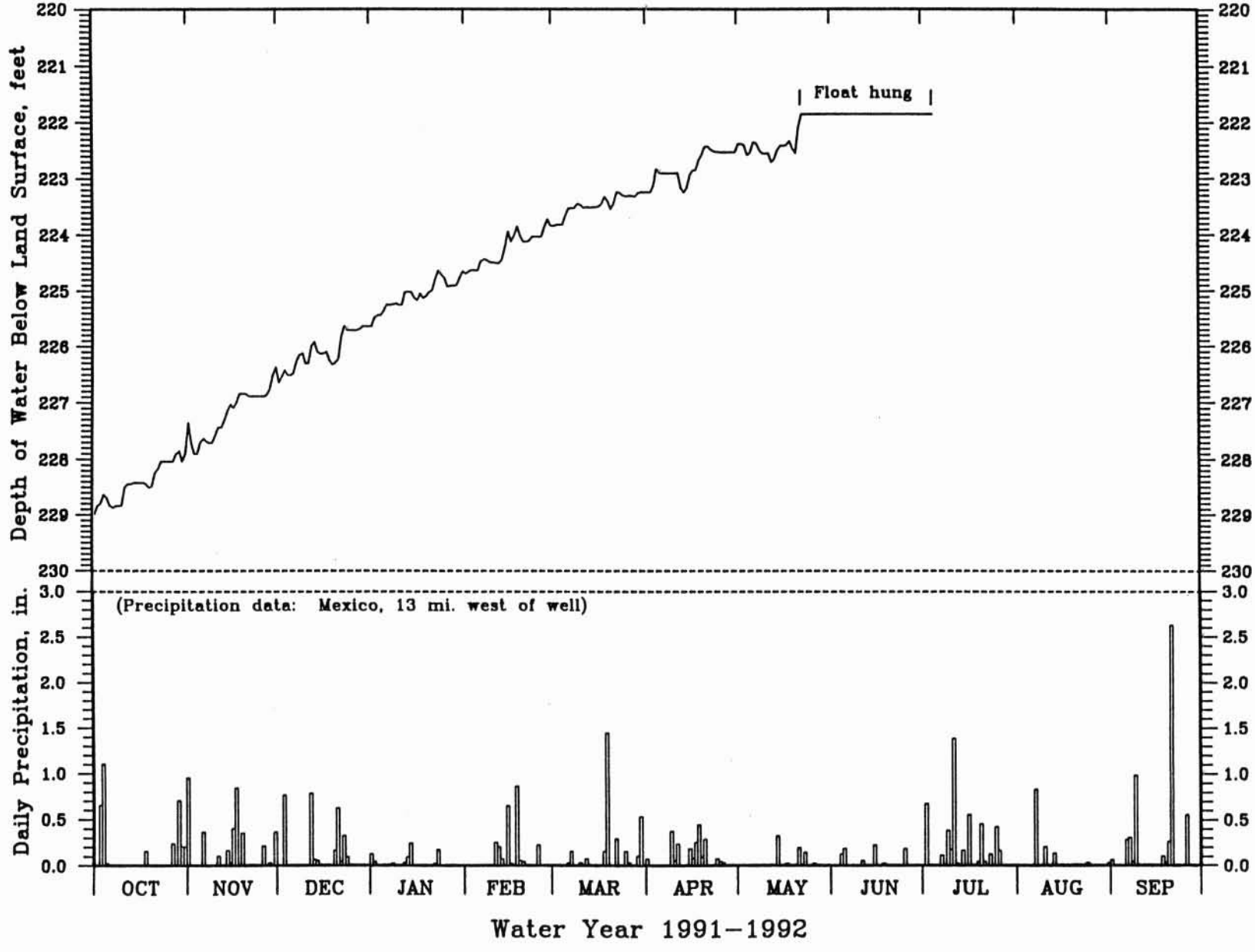



Figure 12. Water-level hydrograph and precipitation, Scotts Corner observation well.

MONTGOMERY COUNTY: SW1/4 SW1/4 SEC. 23, T. 48 N., R. 5 W. MGS LOG NUMBER: 14429
38 DEG 54 MIN 28 SEC NORTH LATITUDE, 91 DEG 26 MIN 50 SEC WEST LONGITUDE WELL OWNER: CITY OF NEW FLORENCE
LAND SURFACE ELEVATION: 877 FEET ABOVE MEAN SEA LEVEL. (WELL #1A)
MEASURING POINT IS BASE OF RECORDER PLATFORM, 2.5 FT ABOVE LAND SURFACE
TOTAL DEPTH: 1030 FEET WELL DIAMETER: 8 INCHES
CASING: 323 FEET OF 8 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: JOACHIM DOL., ST. PETER SS., POWELL DOL., JEFFERSON CITY DOL., AND ROUBIDOUX FM.
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1990), GRAPHIC RECORDER INSTALLED IN 1981, 11 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 336.04 | 335.82 | 336.07 | 335.90 | 335.78 | 335.45 | 335.27 | 334.81 | 335.34 | 335.81 | 337.70 | 337.57 |
| 2 | 335.89 | 336.24 | 335.75 | 335.68 | 335.73 | 335.48 | 335.24 | 334.94 | 335.34 | 336.11 | 337.57 | 337.39 |
| 3 | 335.84 | 336.38 | 335.82 | 335.65 | 335.71 | 335.44 | 334.93 | 335.05 | 335.08 | 336.47 | 337.63 | 337.54 |
| 4 | 335.74 | 336.33 | 336.09 | 335.72 | 335.74 | 335.39 | 335.03 | 334.95 | 335.04 | 336.37 | 337.82 | 337.58 |
| 5 | 336.02 | 336.07 | 335.86 | 335.65 | 335.70 | 335.27 | 335.26 | 335.06 | 335.06 | 336.19 | 337.99 | 337.49 |
| 6 | 336.21 | 336.14 | 335.81 | 335.66 | 335.57 | 335.17 | 335.16 | 335.26 | 335.10 | 336.19 | 338.06 | 337.53 |
| 7 | 336.14 | 336.34 | 335.63 | 335.63 | 335.61 | 335.33 | 335.15 | 335.18 | 335.30 | 336.06 | 337.84 | 337.48 |
| 8 | 336.01 | 336.42 | 335.65 | 335.47 | 335.77 | 335.34 | 335.11 | 334.99 | 335.32 | 336.05 | 337.78 | 337.50 |
| 9 | 336.05 | 336.25 | 335.89 | 335.64 | 335.86 | 335.09 | 335.06 | 335.04 | 335.33 | 336.10 | 337.75 | 337.30 |
| 10 | 336.06 | 336.13 | 335.84 | 335.75 | 335.79 | 335.33 | 334.92 | 335.18 | 335.36 | 336.08 | 337.59 | 337.54 |
| 11 | 335.85 | 336.19 | 335.87 | 335.62 | 335.89 | 335.32 | 335.11 | 335.23 | 335.44 | 336.02 | 337.60 | 337.61 |
| 12 | 335.98 | 336.14 | 335.54 | 335.44 | 335.75 | 335.34 | 335.44 | 335.19 | 335.45 | 335.87 | 337.56 | 337.52 |
| 13 | 335.96 | 335.95 | 335.69 | 335.37 | 335.65 | 335.37 | 335.29 | 335.35 | 335.40 | 335.85 | 337.54 | 337.43 |
| 14 | 335.85 | 335.92 | 336.04 | 335.54 | 335.41 | 335.39 | 335.10 | 335.26 | 335.33 | 335.80 | 337.53 | 337.42 |
| 15 | 335.98 | 336.02 | 336.07 | 335.77 | 335.39 | 335.55 | 335.00 | 335.28 | 335.36 | 335.82 | 337.48 | 337.46 |
| 16 | 336.04 | 336.14 | 335.90 | 335.64 | 335.64 | 335.36 | 334.93 | 335.27 | 335.31 | 335.88 | 337.39 | 337.45 |
| 17 | 335.97 | 335.89 | 335.96 | 335.72 | 335.40 | 335.27 | 334.99 | 335.35 | 335.24 | 336.00 | 337.36 | 337.36 |
| 18 | 336.20 | 335.67 | 336.22 | 335.95 | 335.35 | 335.05 | 334.77 | 335.42 | 335.36 | 336.10 | 337.38 | 337.35 |
| 19 | 336.39 | 335.78 | 336.22 | 335.77 | 335.61 | 335.31 | 334.68 | 335.37 | 335.43 | 336.01 | 337.46 | 337.41 |
| 20 | 336.23 | 335.95 | 336.07 | 335.72 | 335.62 | 335.42 | 334.61 | 335.41 | 335.54 | 336.03 | 337.52 | 337.12 |
| 21 | 336.02 | 335.95 | 336.05 | 335.59 | 335.63 | 335.20 | 334.74 | 335.41 | 335.64 | 336.12 | 337.80 | 337.15 |
| 22 | 336.04 | 335.82 | 335.73 | 335.37 | 335.54 | 335.26 | 334.95 | 335.37 | 335.58 | 336.20 | 338.01 | 337.42 |
| 23 | 336.02 | 335.88 | 335.66 | 335.40 | 335.46 | 335.36 | 334.93 | 335.28 | 335.43 | 336.50 | 338.00 | 337.54 |
| 24 | 335.97 | 336.03 | 335.89 | 335.69 | 335.54 | 335.34 | 335.06 | 335.31 | 335.44 | 336.83 | 338.02 | 337.42 |
| 25 | 336.06 | 336.18 | 335.92 | 335.70 | 335.59 | 335.25 | 335.06 | 335.18 | 335.49 | 336.91 | 337.95 | 337.30 |
| 26 | 336.04 | 336.00 | 335.92 | 335.88 | 335.43 | 335.23 | 335.13 | 335.20 | 335.63 | 336.98 | 337.87 | 337.26 |
| 27 | 336.12 | 335.96 | 336.02 | 335.87 | 335.39 | 335.45 | 335.18 | 335.26 | 335.70 | 337.17 | 337.77 | 337.39 |
| 28 | 335.98 | 335.85 | 335.83 | 335.96 | 335.29 | 335.32 | 335.07 | 335.25 | 335.63 | 337.21 | 337.72 | 337.49 |
| 29 | 336.10 | 335.67 | 335.79 | 335.85 | 335.56 | 335.12 | 334.89 | 335.19 | 335.63 | 337.12 | 337.63 | 337.54 |
| 30 | 336.33 | 335.92 | 335.91 | 335.64 | ------ | 335.27 | 334.85 | 335.26 | 335.71 | 337.13 | 337.69 | 337.46 |
| 31 | 336.02 | ------ | 335.99 | 335.71 | ------ | 335.20 | ------ | 335.34 | ------ | 337.49 | 337.69 | ------ |
| MIN | 335.74 | 335.67 | 335.54 | 335.37 | 335.29 | 335.05 | 334.61 | 334.81 | 335.04 | 335.8 | 337.36 | 337.12 |
| MAX | 336.39 | 336.42 | 336.22 | 335.96 | 335.89 | 335.55 | 335.44 | 335.42 | 335.71 | 337.49 | 338.06 | 337.61 |
| MEAN | 336.04 | 336.03 | 335.89 | 335.68 | 335.60 | 335.31 | 335.03 | 335.21 | 335.40 | 336.34 | 337.70 | 337.43 |

1992 EXTREMES: MINIMUM - 334.61 (APR 20), MAXIMUM - 338.06 (AUG 6), AVERAGE - 335.97

Table 13. Groundwater level data, WY 1991-1992, New Florence observation well.

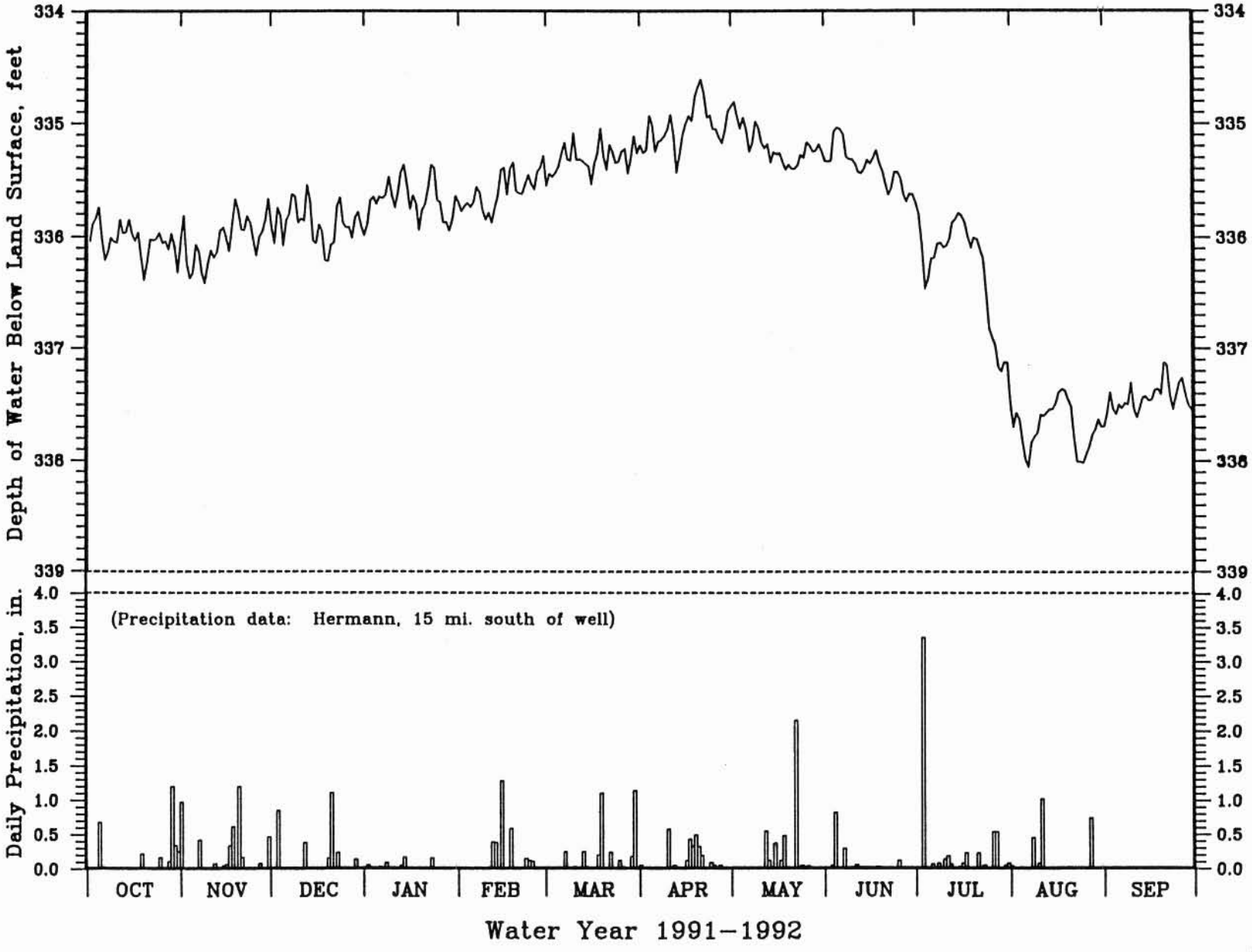



Figure 13. Water-level hydrograph and precipitation, New Florence observation well.

LINCOLN COUNTY: NE1/4 SE1/4 SEC. 26, T. 49 N., R. 1 W. DGLS LOG NUMBER: 9108
38 DEG 58 MIN 45 SEC NORTH LATITUDE, 90 DEG 58 MIN 38 SEC WEST LONGITUDE WELL OWNER: CITY OF TROY
LAND SURFACE ELEVATION: 535 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 4.0 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 813 FEET WELL DIAMETER: 8 INCHES
CASING: 400 FEET OF 8 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: KIMMSWICK FM., DECORAH FM., PLATTIN FM., JOACHIM FM., AND ST. PETER SANDSTONE
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1989), GRAPHIC RECORDER INSTALLED IN 1980, 12 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 85.42 | 84.29 | 77.29 | 72.11 | 78.37 | 76.40 | 74.99 | 70.70 | 78.63 | 97.42 | 93.95 | 90.85 |
| 2 | 86.05 | 84.26 | 76.37 | 71.52 | 77.47 | 75.23 | 75.52 | 70.31 | 80.75 | 97.45 | 92.61 | 91.79 |
| 3 | 86.53 | 83.62 | 77.43 | 72.19 | 76.02 | 75.95 | 75.71 | 69.26 | 82.77 | 97.50 | 91.80 | 92.87 |
| 4 | 86.74 | 82.38 | 78.76 | 72.81 | 76.97 | 76.38 | 75.78 | 68.55 | 84.39 | 96.77 | 92.18 | 93.72 |
| 5 | 86.98 | 82.39 | 79.47 | 72.69 | 78.18 | 76.83 | 74.32 | 68.95 | 85.80 | 96.09 | 92.62 | 94.01 |
| 6 | 85.50 | 82.64 | 80.11 | 72.01 | 79.02 | 77.22 | 73.15 | 70.15 | 86.39 | 95.95 | 92.96 | 92.88 |
| 7 | 84.17 | 83.46 | 80.21 | 73.13 | 79.77 | 77.34 | 73.92 | 71.01 | 85.18 | 96.61 | 93.11 | 91.38 |
| 8 | 84.73 | 84.31 | 78.72 | 74.17 | 80.47 | 75.69 | 74.66 | 71.49 | 84.39 | 97.05 | 92.71 | 90.57 |
| 9 | 85.44 | 84.72 | 77.77 | 75.50 | 79.42 | 74.35 | 75.16 | 71.60 | 86.00 | 97.45 | 91.56 | 91.40 |
| 10 | 85.94 | 83.74 | 78.55 | 76.82 | 77.75 | 75.33 | 75.50 | 70.20 | 87.76 | 97.99 | 90.78 | 92.64 |
| 11 | 86.25 | 82.30 | 79.37 | 77.56 | 78.69 | 76.10 | 75.54 | 69.52 | 89.20 | 97.99 | 91.14 | 93.62 |
| 12 | 86.45 | 82.91 | 79.77 | 76.67 | 79.64 | 76.64 | 74.15 | 70.46 | 90.40 | 97.27 | 91.39 | 93.93 |
| 13 | 84.87 | 83.65 | 80.36 | 75.18 | 80.29 | 77.08 | 73.07 | 71.50 | 90.96 | 96.46 | 91.50 | 92.52 |
| 14 | 83.29 | 84.28 | 80.77 | 76.32 | 80.72 | 77.06 | 73.88 | 72.31 | 89.92 | 96.48 | 91.51 | 91.28 |
| 15 | 82.44 | 84.88 | 79.29 | 77.78 | 80.40 | 75.52 | 74.62 | 73.46 | 89.12 | 97.50 | 90.95 | 92.09 |
| 16 | 83.36 | 85.27 | 77.99 | 78.54 | 78.59 | 74.24 | 75.02 | 73.62 | 90.77 | 98.34 | 89.68 | 93.10 |
| 17 | 84.14 | 83.39 | 78.78 | 79.09 | 76.70 | 74.90 | 74.66 | 72.54 | 92.54 | 98.97 | 88.99 | 94.02 |
| 18 | 84.88 | 81.68 | 80.16 | 79.33 | 75.58 | 75.50 | 72.83 | 72.09 | 94.12 | 99.12 | 89.33 | 94.90 |
| 19 | 85.44 | 81.39 | 80.30 | 77.42 | 77.02 | 76.21 | 71.39 | 73.37 | 95.88 | 97.50 | 89.66 | 95.53 |
| 20 | 84.19 | 81.22 | 79.80 | 75.98 | 78.32 | 76.73 | 70.61 | 74.65 | 96.85 | 96.35 | 90.00 | 94.08 |
| 21 | 82.73 | 81.00 | 79.05 | 75.98 | 79.11 | 76.58 | 71.76 | 75.76 | 95.54 | 97.13 | 90.38 | 92.71 |
| 22 | 83.38 | 80.67 | 77.40 | 76.52 | 78.94 | 74.93 | 72.83 | 76.36 | 94.63 | 97.34 | 90.41 | 94.28 |
| 23 | 84.24 | 80.41 | 76.15 | 77.21 | 77.05 | 73.85 | 73.48 | 76.88 | 95.72 | 97.29 | 89.79 | 95.69 |
| 24 | 84.84 | 79.62 | 75.42 | 77.99 | 75.85 | 74.63 | 74.01 | 75.74 | 97.09 | 97.04 | 88.99 | 96.22 |
| 25 | 85.46 | 78.80 | 74.67 | 77.86 | 76.63 | 75.32 | 73.16 | 74.61 | 98.39 | 96.19 | 88.73 | 96.63 |
| 26 | 85.71 | 79.50 | 73.97 | 76.75 | 77.23 | 75.84 | 71.66 | 74.33 | 99.38 | 94.68 | 89.48 | 96.73 |
| 27 | 84.33 | 80.32 | 73.44 | 75.48 | 77.73 | 76.44 | 70.84 | 76.19 | 99.16 | 93.73 | 90.63 | 95.30 |
| 28 | 82.80 | 80.69 | 72.71 | 76.30 | 78.03 | 76.36 | 71.36 | 77.83 | 97.81 | 93.94 | 91.58 | 93.98 |
| 29 | 83.46 | 79.26 | 72.11 | 77.03 | 78.22 | 74.53 | 71.20 | 79.16 | 97.02 | 94.08 | 92.07 | 94.86 |
| 30 | 84.56 | 78.15 | 71.95 | 77.44 | ------ | 73.46 | 70.95 | 79.31 | 97.24 | 94.12 | 91.07 | 95.73 |
| 31 | 84.83 | ------ | 72.81 | 77.93 | ------ | 74.19 | ------ | 78.72 | ------ | 94.37 | 90.08 | ------ |
| MIN | 82.44 | 78.15 | 71.95 | 71.52 | 75.58 | 73.46 | 70.61 | 68.55 | 78.63 | 93.73 | 88.73 | 90.57 |
| MAX | 86.98 | 85.27 | 80.77 | 79.33 | 80.72 | 77.34 | 75.78 | 79.31 | 99.38 | 99.12 | 93.95 | 96.73 |
| MEAN | 84.81 | 82.17 | 77.45 | 75.91 | 78.21 | 75.70 | 73.52 | 73.25 | 91.13 | 96.65 | 91.02 | 93.64 |

1992 EXTREMES: MINIMUM - 68.55 (MAY 4), MAXIMUM - 99.38 (JUN 26), MEAN - 82.79

Table 14. Groundwater level data, WY 1991-1992, Troy observation well.

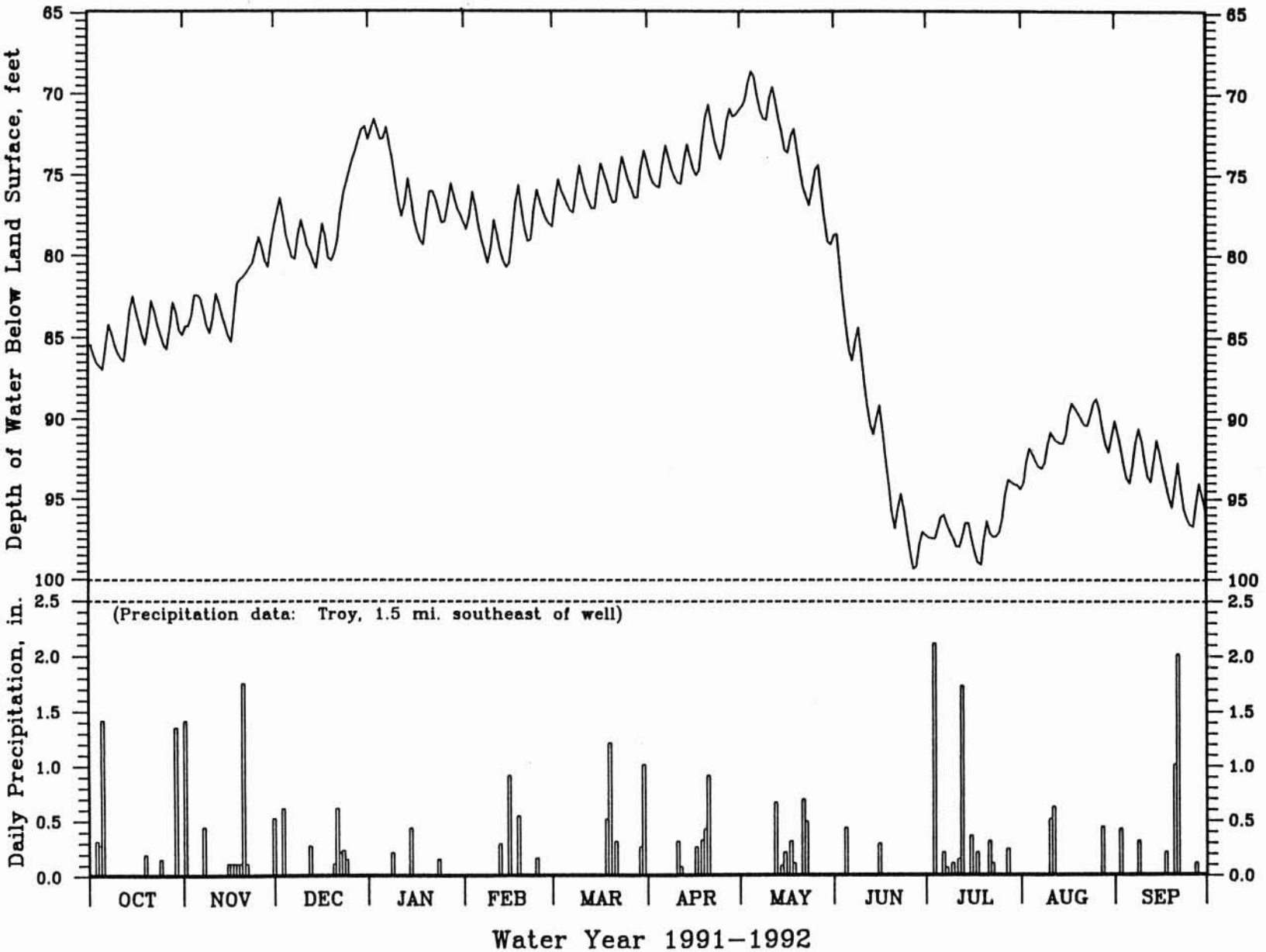



Figure 14. Water-level hydrograph and precipitation, Troy observation well.

ST. CHARLES COUNTY: SE1/4 SE1/4 SEC. 24, T. 47 N., R. 2 E. DGLS LOG NUMBER: 8083 AND 11827
38 DEG 48 MIN 46 SEC NORTH LATITUDE, 90 DEG 51 MIN 03 SEC WEST LONGITUDE WELL OWNER: CITY OF WENTZVILLE
LAND SURFACE ELEVATION: 608 FEET ABOVE MEAN SEA LEVEL. (WELL #2)
MEASURING POINT IS BASE OF RECORDER BOX, 2.0 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 1337 FEET WELL DIAMETER: 10 INCHES
CASING: 380 FEET OF 10 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: KIMMSWICK FM., DECORAH FM., JOACHIM DOL., ST. PETER SS., POWELL DOL., COTTER DOL., JEFFERSON CITY DOL., AND ROUBIDOUX FM.
TYPE OF INSTALLATION: STEVENS DIGITAL AND A-35 GRAPHIC RECORDER, INSTALLED IN 1980, 12 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 176.20 | 174.97 | 174.73 | 174.79 | 176.05 | 175.85 | 174.54 | 173.60 | 174.02 | 174.92 | 176.18 | 176.48 |
| 2 | 175.85 | 175.35 | 174.45 | 174.64 | 176.03 | 175.82 | 174.50 | 173.64 | 174.00 | 174.96 | 176.15 | 176.57 |
| 3 | 175.72 | 175.47 | 174.45 | 174.65 | 176.02 | 175.75 | 174.25 | 173.70 | 173.95 | 175.06 | 176.16 | 176.50 |
| 4 | 175.59 | 175.42 | 174.71 | 174.74 | 176.07 | 175.68 | 174.21 | 173.66 | 173.94 | 175.12 | 176.19 | 176.45 |
| 5 | 175.77 | 175.18 | 174.52 | 174.73 | 176.07 | 175.55 | 174.43 | 173.70 | 173.97 | 175.12 | 176.22 | 176.47 |
| 6 | 175.90 | 175.19 | 174.47 | 174.77 | 175.97 | 175.42 | 174.32 | 173.79 | 174.02 | 175.15 | 176.25 | 176.46 |
| 7 | 175.84 | 175.35 | 174.28 | 174.81 | 176.01 | 175.47 | 174.24 | 173.76 | 174.11 | 175.20 | 176.21 | 176.47 |
| 8 | 175.71 | 175.43 | 174.24 | 174.72 | 176.21 | 175.49 | 174.22 | 173.68 | 174.16 | 175.23 | 176.22 | 176.46 |
| 9 | 175.71 | 175.28 | 174.41 | 174.86 | 176.37 | 175.25 | 174.14 | 173.66 | 174.20 | 175.27 | 176.26 | 176.56 |
| 10 | 175.68 | 174.19 | 174.42 | 175.01 | 176.33 | 175.35 | 173.92 | 173.69 | 174.21 | 175.35 | 176.27 | 176.46 |
| 11 | 175.48 | 175.15 | 174.39 | 174.97 | 176.40 | 175.38 | 173.73 | 173.66 | 174.24 | 175.37 | 176.32 | 176.43 |
| 12 | 175.55 | 174.16 | 174.12 | 174.86 | 176.33 | 175.30 | 173.89 | 173.67 | 174.39 | 175.41 | 176.36 | 176.44 |
| 13 | 175.58 | 174.90 | 174.22 | 174.81 | 176.17 | 175.35 | 173.84 | 173.72 | 174.54 | 175.43 | 176.39 | 176.47 |
| 14 | 175.46 | 174.82 | 174.49 | 175.16 | 176.03 | 175.28 | 173.76 | 173.73 | 174.47 | 175.48 | 176.42 | 176.35 |
| 15 | 175.51 | 174.86 | 174.55 | 175.47 | 175.90 | 175.38 | 173.70 | 173.75 | 174.46 | 175.53 | 176.44 | 176.30 |
| 16 | 175.55 | 174.98 | 174.44 | 175.79 | 176.16 | 175.25 | 173.68 | 173.78 | 174.60 | 175.57 | 176.43 | 176.36 |
| 17 | 175.45 | 174.78 | 174.44 | 175.99 | 176.00 | 175.08 | 173.82 | 173.83 | 174.66 | 175.66 | 176.58 | 176.43 |
| 18 | 175.57 | 174.57 | 174.71 | 176.03 | 175.89 | 174.89 | 173.74 | 173.84 | 174.64 | 175.73 | 176.52 | 176.45 |
| 19 | 175.74 | 174.75 | 174.76 | 175.85 | 176.09 | 175.01 | 173.65 | 173.85 | 174.65 | 175.74 | 176.53 | 176.43 |
| 20 | 175.61 | 174.94 | 174.72 | 175.75 | 175.17 | 175.09 | 173.58 | 173.83 | 174.70 | 175.77 | 176.52 | 176.58 |
| 21 | 175.42 | 174.87 | 174.80 | 175.66 | 176.13 | 174.92 | 173.63 | 173.84 | 174.77 | 175.80 | 176.55 | 176.55 |
| 22 | 175.37 | 174.75 | 174.48 | 175.48 | 176.03 | 174.87 | 173.70 | 173.84 | 174.77 | 175.81 | 176.55 | 176.65 |
| 23 | 175.34 | 174.76 | 174.34 | 175.47 | 175.93 | 174.94 | 173.68 | 173.85 | 174.73 | 175.86 | 176.56 | 176.70 |
| 24 | 175.29 | 174.84 | 174.57 | 175.76 | 176.16 | 174.91 | 173.70 | 173.88 | 174.74 | 175.91 | 176.54 | 176.65 |
| 25 | 175.33 | 174.96 | 174.62 | 175.76 | 176.29 | 174.82 | 173.72 | 173.86 | 174.77 | 175.92 | 176.55 | 176.54 |
| 26 | 175.29 | 174.82 | 174.64 | 175.98 | 176.04 | 174.74 | 173.76 | 173.88 | 174.85 | 175.92 | 176.56 | 176.55 |
| 27 | 175.34 | 174.72 | 174.74 | 175.96 | 175.92 | 174.90 | 173.77 | 173.92 | 174.92 | 175.96 | 176.55 | 176.48 |
| 28 | 174.29 | 174.61 | 174.61 | 176.08 | 175.77 | 174.82 | 173.71 | 173.94 | 174.93 | 176.03 | 176.57 | 176.46 |
| 29 | 175.30 | 174.46 | 174.57 | 176.02 | 175.97 | 174.60 | 173.64 | 173.93 | 174.90 | 176.04 | 176.55 | 176.42 |
| 30 | 175.46 | 174.59 | 174.72 | 175.87 | ------ | 174.62 | 173.62 | 173.97 | 174.90 | 176.04 | 176.49 | 176.45 |
| 31 | 175.22 | ------ | 174.83 | 175.93 | ------ | 174.53 | ------ | 174.02 | ------ | 176.10 | 176.45 | ------ |
| MIN | 174.29 | 174.16 | 174.12 | 174.64 | 175.17 | 174.53 | 173.58 | 173.60 | 173.94 | 174.92 | 176.15 | 176.30 |
| MAX | 176.20 | 175.47 | 174.83 | 176.08 | 176.40 | 175.85 | 174.54 | 174.02 | 174.93 | 176.10 | 176.58 | 176.70 |
| MEAN | 175.52 | 174.90 | 174.53 | 175.37 | 176.05 | 175.17 | 173.90 | 173.79 | 174.47 | 175.56 | 176.40 | 176.49 |

1992 EXTREMES: MINIMUM - 173.58 (APR 20), MAXIMUM - 176.70 (SEP 23), MEAN - 175.19

Table 15. Groundwater level data, WY 1991-1992, Wentzville observation well.

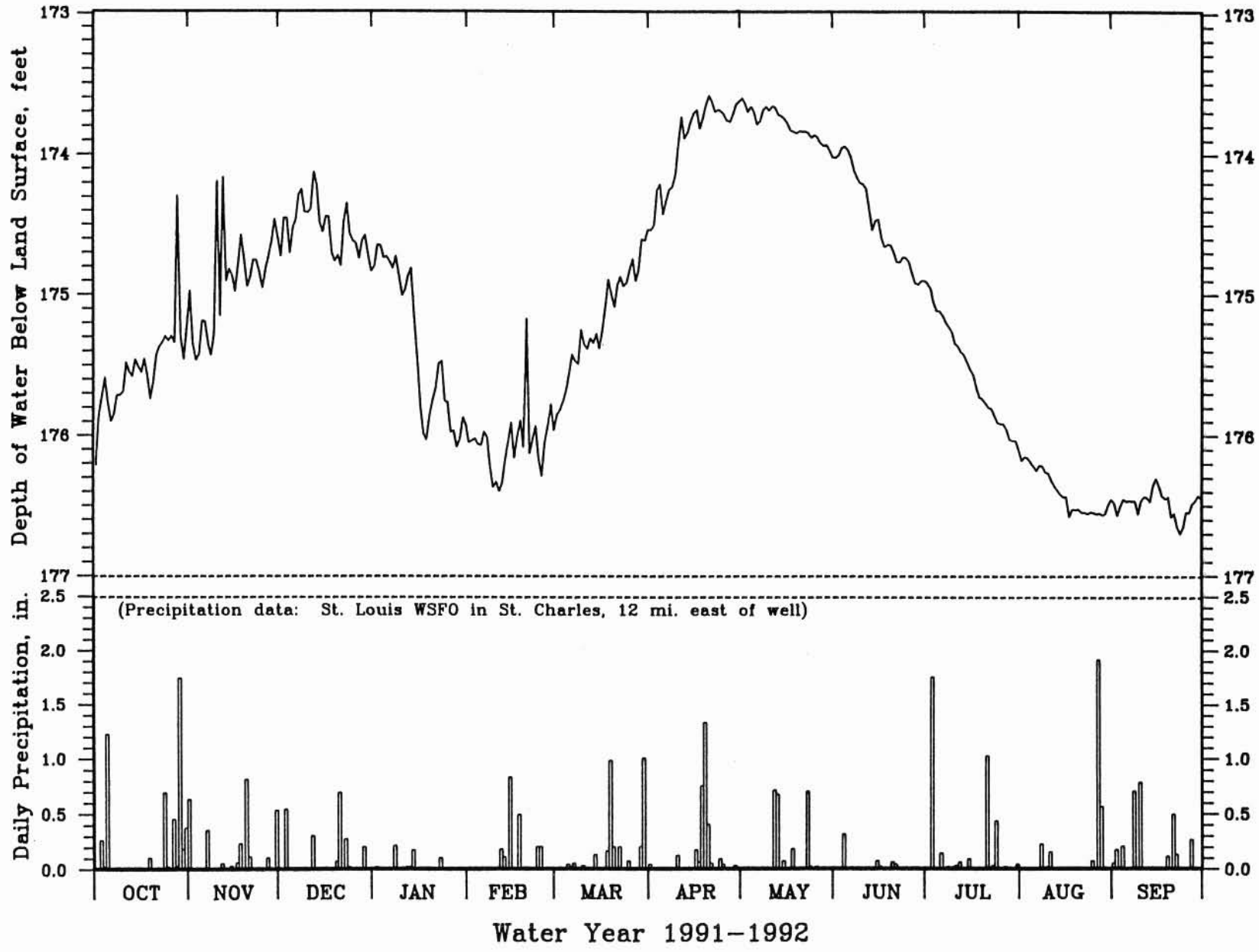



Figure 15. Water-level hydrograph and precipitation, Wentzville observation well.

ST. CHARLES COUNTY: NE1/4 NE1/4 SEC. 29, T. 47 N., R. 3 E. DGLS LOG NUMBER: 6414
38 DEG 48 MIN 36 SEC NORTH LATITUDE, 90 DEG 42 MIN 02 SEC WEST LONGITUDE WELL OWNER: CITY OF O'FALLON
LAND SURFACE ELEVATION: 564 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.8 FEET ABOVE LAND SURFACE (NOTE: **** DENOTES MISSING DATA)
TOTAL DEPTH: 833 FEET WELL DIAMETER: 8 INCHES
CASING: 375 FEET OF 8 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: PLATTIN FM., JOACHIM DOL., AND ST. PETER SANDSTONE
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1986), GRAPHIC RECORDER INSTALLED IN 1981, 11 YEARS OF DATA
NOTE: SEVERAL MONTHS OF MISSING DATA DUE TO FLOAT MALFUNCTION

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ***** | ***** | ***** | ***** | ***** | 251.47 | 252.18 | 251.35 | 255.02 | 271.66 | 274.52 | 274.40 |
| 2 | ***** | ***** | ***** | ***** | ***** | 251.87 | 251.61 | 251.17 | 255.59 | 272.33 | 273.66 | 273.94 |
| 3 | ***** | ***** | ***** | ***** | ***** | 252.05 | 251.51 | 250.89 | 256.06 | 272.77 | 273.81 | 273.82 |
| 4 | ***** | ***** | ***** | ***** | ***** | 251.66 | 251.24 | 251.17 | 257.16 | 272.90 | 274.01 | 273.80 |
| 5 | ***** | ***** | ***** | ***** | ***** | 251.25 | 250.97 | 251.58 | 258.10 | 272.25 | 273.46 | 273.54 |
| 6 | ***** | ***** | ***** | ***** | 254.39 | 251.24 | 250.50 | 251.60 | 258.79 | 272.02 | 273.57 | 273.59 |
| 7 | ***** | ***** | ***** | ***** | 254.57 | 251.67 | 250.31 | 252.43 | 258.86 | 272.97 | 273.47 | 273.01 |
| 8 | ***** | ***** | ***** | ***** | 254.57 | 252.19 | 250.36 | 253.24 | 258.94 | 273.51 | 273.74 | 273.07 |
| 9 | ***** | ***** | ***** | ***** | 254.24 | 251.78 | 249.97 | 252.93 | 260.32 | 273.73 | 274.27 | 272.99 |
| 10 | ***** | ***** | ***** | ***** | 254.34 | 252.95 | 249.99 | 252.62 | 260.97 | 274.20 | 274.80 | 272.61 |
| 11 | ***** | ***** | ***** | ***** | 254.62 | 253.42 | 250.34 | 253.08 | 261.48 | 274.90 | 274.67 | 272.66 |
| 12 | ***** | ***** | ***** | ***** | 254.23 | 253.51 | 250.16 | 253.57 | 261.83 | 274.71 | 274.21 | 272.57 |
| 13 | ***** | ***** | ***** | ***** | 253.85 | 253.96 | 250.40 | 252.46 | 262.24 | 275.04 | 275.42 | 272.21 |
| 14 | ***** | ***** | ***** | ***** | 254.21 | 253.38 | 250.41 | 250.67 | 263.12 | 276.16 | 276.00 | 272.53 |
| 15 | ***** | ***** | ***** | ***** | 254.42 | 253.25 | 250.49 | 252.65 | 262.36 | 276.36 | 275.91 | 273.47 |
| 16 | ***** | ***** | ***** | ***** | 254.36 | 253.15 | 250.40 | 252.97 | 262.27 | 276.34 | 275.11 | 273.52 |
| 17 | ***** | ***** | ***** | ***** | 254.95 | 253.52 | 250.77 | 253.46 | 262.77 | 276.68 | 274.63 | 273.08 |
| 18 | ***** | ***** | ***** | ***** | 255.67 | 253.03 | 250.95 | 254.03 | 263.16 | 277.35 | 275.35 | 272.77 |
| 19 | ***** | ***** | ***** | ***** | 255.73 | 252.86 | 250.68 | 254.66 | 263.24 | 276.86 | 274.91 | 272.33 |
| 20 | ***** | ***** | ***** | ***** | 255.12 | 253.07 | 250.58 | 255.08 | 263.22 | 276.86 | 274.80 | 271.17 |
| 21 | ***** | ***** | ***** | ***** | 254.34 | 255.14 | 250.93 | 255.60 | 262.82 | 277.03 | 275.00 | 271.36 |
| 22 | ***** | ***** | ***** | ***** | 253.36 | 254.43 | 250.86 | 255.50 | 263.11 | 277.55 | 275.18 | 271.64 |
| 23 | ***** | ***** | ***** | ***** | 252.45 | 253.91 | 250.99 | 255.66 | 263.82 | 276.53 | 274.80 | 271.41 |
| 24 | ***** | ***** | ***** | ***** | 252.50 | 252.95 | 251.60 | 255.62 | 265.15 | 276.24 | 275.22 | 271.01 |
| 25 | ***** | ***** | ***** | ***** | 252.55 | 254.42 | 251.43 | 255.20 | 266.06 | 276.08 | 275.92 | 270.74 |
| 26 | ***** | ***** | ***** | ***** | 252.02 | 254.42 | 250.80 | 255.20 | 267.17 | 275.14 | 275.46 | 270.14 |
| 27 | ***** | ***** | ***** | ***** | 251.87 | 254.37 | 250.80 | 254.90 | 267.98 | 275.21 | 274.95 | 269.53 |
| 28 | ***** | ***** | ***** | ***** | 251.96 | 253.52 | 251.21 | 254.54 | 268.13 | 275.32 | 274.92 | 269.33 |
| 29 | ***** | ***** | ***** | ***** | 251.94 | 252.38 | 251.39 | 255.25 | 268.88 | 275.39 | 274.57 | 269.65 |
| 30 | ***** | ***** | ***** | ***** | ------ | 252.48 | 251.11 | 255.65 | 270.31 | 274.89 | 274.24 | 269.49 |
| 31 | ***** | ------ | ***** | ***** | ------ | 252.56 | ------ | 255.87 | ------ | 275.23 | 274.37 | ------ |
| MIN | ***** | ***** | ***** | ***** | 251.87 | 251.24 | 249.97 | 250.67 | 255.02 | 271.66 | 273.46 | 269.33 |
| MAX | ***** | ***** | ***** | ***** | 255.73 | 255.14 | 252.18 | 255.87 | 270.31 | 277.55 | 276.00 | 274.40 |
| MEAN | ***** | ***** | ***** | ***** | ***** | 252.96 | 250.83 | 253.57 | 262.30 | 274.97 | 274.68 | 272.18 |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - *****

Table 16. Groundwater level data, WY 1991-1992, O'Fallon observation well.

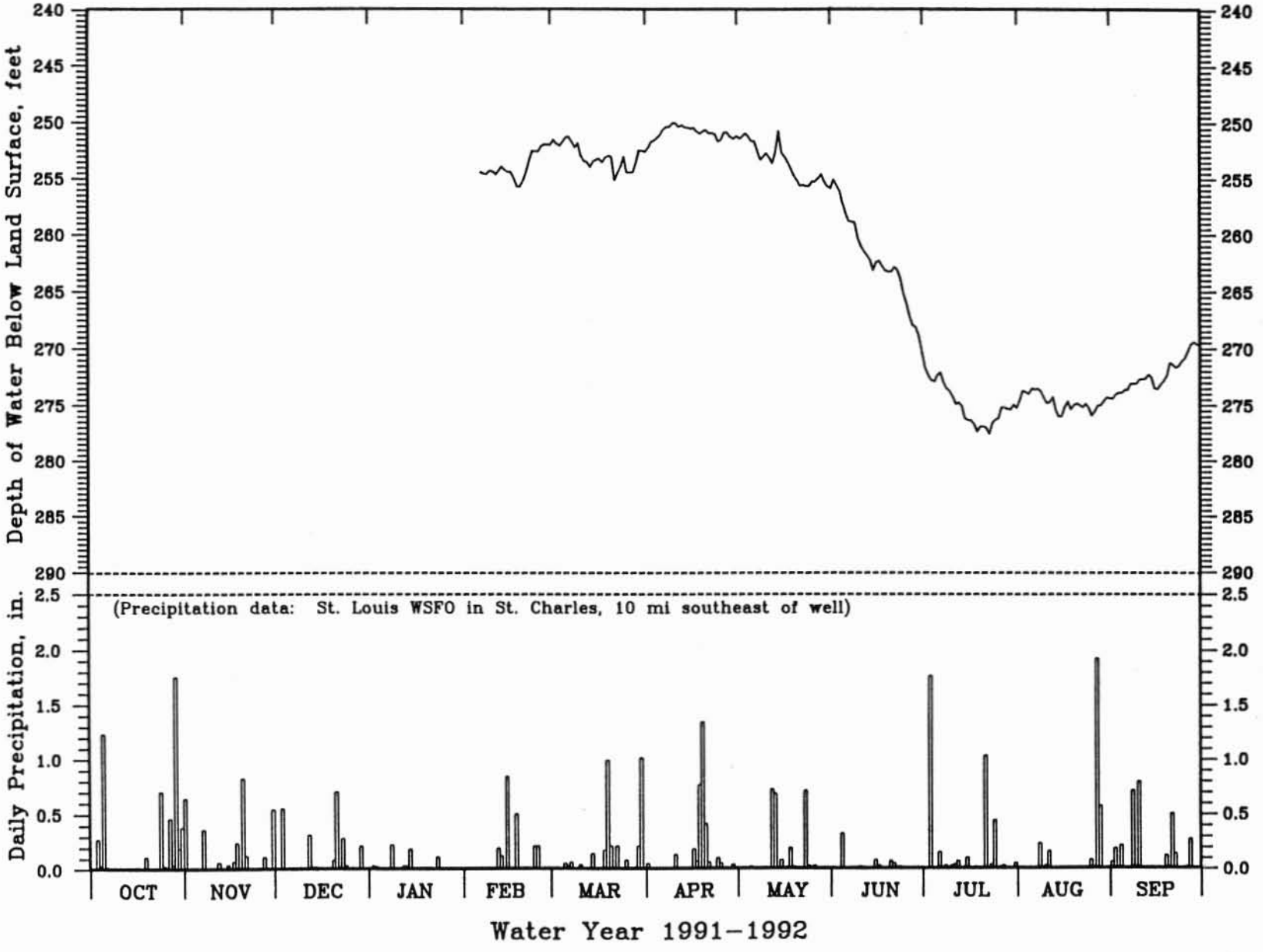



Figure 16. Water-level hydrograph and precipitation, O'Fallon observation well.

ST. LOUIS COUNTY: NW1/4 SE1/4 SEC. 18, T. 47 N., R. 8 E. DGLS LOG NUMBER: 16274
38 DEG 48 MIN 49 SEC NORTH LATITUDE, 90 DEG 09 MIN 20 SEC WEST LONGITUDE WELL OWNER: BOB BECKMAN
LAND SURFACE ELEVATION: 422 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 10.5 FEET ABOVE LAND SURFACE (NOTE: **** DENOTES MISSING DATA)
TOTAL DEPTH: 125 FEET WELL DIAMETER: 8 INCHES
CASING: 59 FEET OF 8 INCH STEEL CASING, PRESSURE GROUTED, 4 INCH STEEL PRODUCTION CASING FROM 59 TO 100 FEET
WELL PRODUCES FROM THE MISSISSIPPI RIVER ALLUVIUM
SCREEN INFORMATION: WELL CONTAINS 4 FEET OF 4 INCH WELL SCREEN
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1980, 12 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30.49 | 31.34 | 31.16 | 30.20 | 31.05 | **** | **** | **** | **** | 30.04 | **** | **** |
| 2 | 30.52 | 31.41 | 31.04 | 30.14 | 31.06 | **** | **** | **** | **** | 30.07 | **** | **** |
| 3 | 30.56 | 31.42 | 31.07 | 30.13 | 31.08 | **** | **** | **** | **** | 30.14 | **** | **** |
| 4 | 30.59 | 31.41 | 31.08 | 30.14 | 31.12 | **** | **** | **** | 30.55 | 30.13 | **** | **** |
| 5 | 30.67 | 31.36 | 30.97 | 30.13 | 31.13 | **** | **** | **** | 30.47 | 30.12 | **** | **** |
| 6 | 30.69 | 31.41 | 30.93 | 30.15 | 31.14 | **** | **** | **** | 30.39 | 30.15 | **** | **** |
| 7 | 30.69 | 31.44 | 30.86 | 30.17 | 31.18 | **** | **** | **** | 30.28 | 30.17 | **** | **** |
| 8 | 30.70 | 31.43 | 30.84 | 30.15 | **** | **** | **** | **** | 30.24 | 30.20 | **** | **** |
| 9 | 30.73 | 31.39 | 30.87 | 30.23 | **** | **** | **** | **** | 30.16 | 30.24 | **** | **** |
| 10 | 30.75 | 31.36 | 30.83 | 30.28 | **** | **** | **** | **** | 30.10 | 30.30 | **** | **** |
| 11 | 30.74 | 31.39 | 30.81 | 30.28 | **** | **** | **** | **** | 30.03 | 30.33 | **** | **** |
| 12 | 30.80 | 31.38 | 30.75 | 30.27 | **** | **** | **** | **** | 29.97 | 30.32 | **** | **** |
| 13 | 30.81 | 31.34 | 30.79 | 30.27 | **** | **** | **** | **** | 29.92 | 30.33 | **** | **** |
| 14 | 30.84 | 31.36 | 30.85 | 30.36 | **** | **** | **** | **** | 29.80 | 30.33 | **** | **** |
| 15 | 30.88 | 31.40 | 30.81 | 30.44 | **** | **** | **** | **** | 29.77 | 30.32 | **** | **** |
| 16 | 30.91 | 31.44 | 30.73 | 30.40 | **** | **** | **** | **** | 29.72 | 30.30 | **** | **** |
| 17 | 30.93 | 31.39 | 30.74 | 30.45 | **** | **** | **** | **** | 29.66 | 30.24 | **** | **** |
| 18 | 30.99 | 31.38 | 30.77 | 30.54 | **** | **** | **** | **** | 29.57 | 30.11 | **** | **** |
| 19 | 31.03 | 31.45 | 30.71 | 30.50 | **** | **** | **** | **** | 29.58 | 29.95 | **** | **** |
| 20 | 31.03 | 31.47 | 30.65 | 30.54 | **** | **** | **** | **** | 29.65 | 29.86 | **** | **** |
| 21 | 31.05 | 31.44 | 30.63 | 30.56 | **** | **** | **** | **** | 29.71 | 29.75 | **** | **** |
| 22 | 31.09 | 31.40 | 30.54 | 30.56 | **** | **** | **** | **** | 29.72 | 29.68 | **** | **** |
| 23 | 31.12 | 31.39 | 30.53 | 30.64 | **** | **** | **** | **** | 29.74 | 29.60 | **** | **** |
| 24 | 31.15 | 31.39 | 30.53 | 30.76 | **** | **** | **** | **** | 29.78 | 29.67 | **** | **** |
| 25 | 31.20 | 31.37 | 30.49 | 30.79 | **** | **** | **** | **** | 29.84 | 29.77 | **** | **** |
| 26 | 31.22 | 31.28 | 30.45 | 30.86 | **** | **** | **** | **** | 29.88 | 29.85 | **** | **** |
| 27 | 31.26 | 31.24 | 30.42 | 30.90 | **** | **** | **** | **** | 29.91 | 29.91 | **** | **** |
| 28 | 31.28 | 31.19 | 30.34 | 30.94 | **** | **** | **** | **** | 29.93 | 30.00 | **** | **** |
| 29 | 31.33 | 31.13 | 30.31 | 30.95 | **** | **** | **** | **** | 29.96 | **** | **** | **** |
| 30 | 31.36 | 31.19 | 30.29 | 30.94 | ------ | **** | **** | **** | 30.00 | **** | **** | **** |
| 31 | 31.32 | ------ | 30.25 | 31.01 | ------ | **** | ------ | **** | ------ | **** | **** | ------ |
| MIN | 30.49 | 31.13 | 30.25 | 30.13 | **** | **** | **** | **** | 29.57 | 29.60 | **** | **** |
| MAX | 31.36 | 31.47 | 31.16 | 31.01 | **** | **** | **** | **** | 30.55 | 30.33 | **** | **** |
| MEAN | 30.93 | 31.37 | 30.71 | 30.47 | **** | **** | **** | **** | **** | **** | **** | **** |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 17. Groundwater level data, WY 1991-1992, Columbia Bottoms observation well.

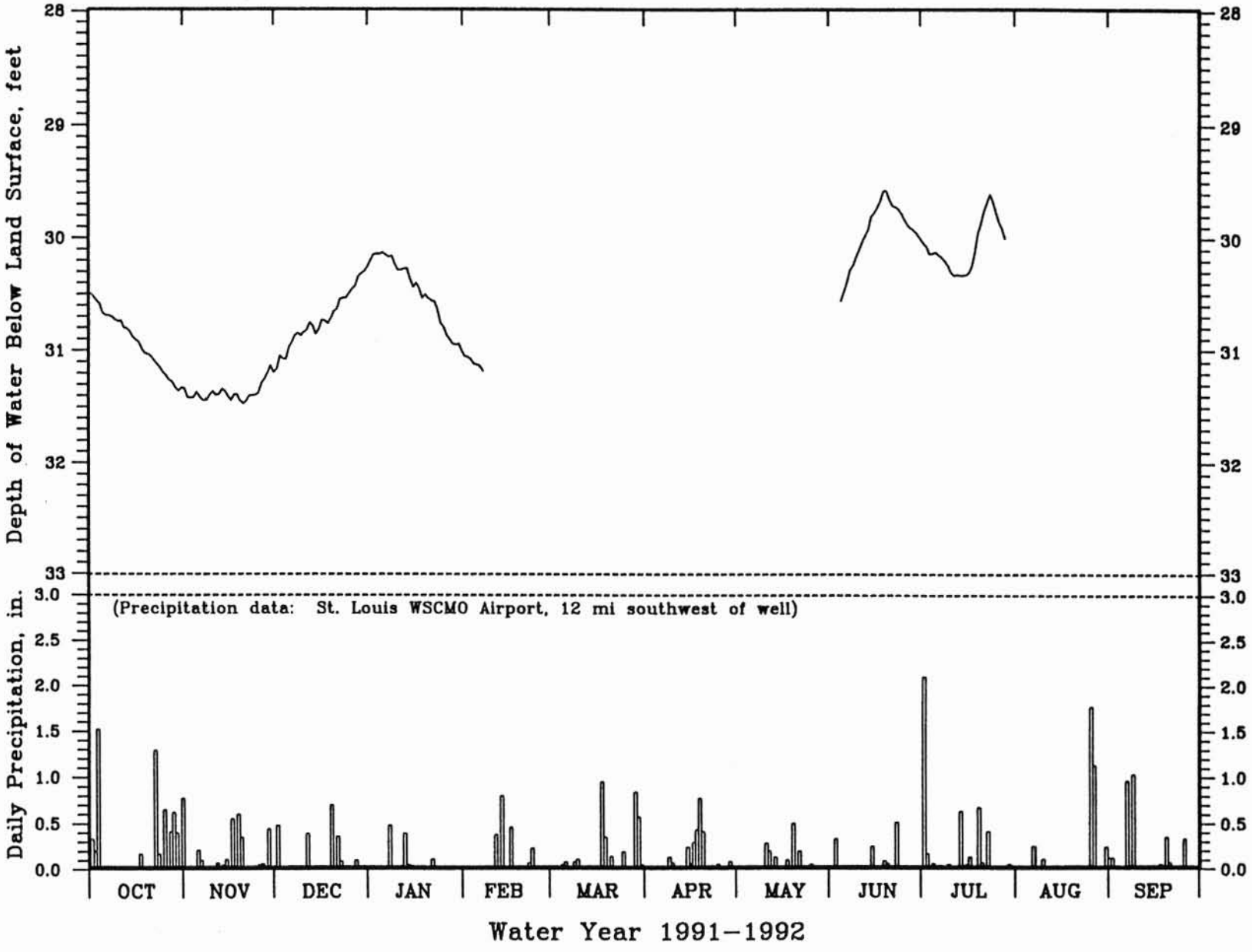



Figure 17. Water-level hydrograph and precipitation, Columbia Bottoms observation well.

FRANKLIN COUNTY: NW1/4 SW1/4 SEC. 27, T. 44 N., R. 1 W. DGLS LOG NUMBER: 2402
38 DEG 32 MIN 12 SEC NORTH LATITUDE, 91 DEG 01 MIN 23 SEC WEST LONGITUDE WELL OWNER: EVERET MARQUART
LAND SURFACE ELEVATION: 575 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 3.0 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 1360 FEET WELL DIAMETER: 10 INCHES
CASING: 76 FEET OF 10 INCH STEEL CASING, NOT PRESSURE GROUTED
FORMATIONS OPEN TO WELL: JEFFERSON CITY DOL., ROUBIDOUX FM., GASCONADE DOL., EMINENCE DOL, POTOSI DOL., DERBY-DOERUN DOL., DAVIS FM., AND BONNETERRE FM.
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1980), GRAPHIC RECORDER INSTALLED IN 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 84.98 | 82.40 | 81.12 | 78.92 | 80.68 | 77.75 | 77.70 | 78.32 | **** | **** | **** | **** |
| 2 | 84.81 | 82.70 | 80.84 | 78.68 | 80.67 | 77.20 | 77.26 | 78.61 | **** | **** | **** | **** |
| 3 | 84.75 | 82.72 | 80.78 | 78.65 | 80.60 | 76.82 | 76.80 | 78.90 | **** | **** | **** | **** |
| 4 | 84.38 | 82.45 | 81.17 | 78.86 | 80.50 | 76.45 | 77.32 | 78.85 | **** | **** | **** | **** |
| 5 | 84.35 | 82.26 | 81.03 | 79.05 | 79.05 | 77.25 | 77.30 | 78.95 | **** | **** | **** | **** |
| 6 | 84.20 | 82.19 | 80.97 | 78.88 | 79.60 | 78.13 | 76.70 | 79.16 | **** | **** | **** | **** |
| 7 | 83.82 | 82.54 | 80.90 | 78.30 | 78.55 | 78.70 | 76.90 | 79.35 | **** | **** | **** | **** |
| 8 | 83.95 | 82.75 | 80.72 | 77.97 | 78.31 | 78.94 | 77.30 | 79.38 | **** | **** | **** | **** |
| 9 | 83.91 | 82.51 | 80.65 | 77.71 | 78.11 | 78.80 | 78.25 | 79.95 | **** | **** | **** | **** |
| 10 | 83.90 | 82.24 | 79.80 | 77.52 | 77.66 | 78.64 | 79.08 | 80.55 | **** | **** | **** | **** |
| 11 | 83.71 | 82.26 | 79.25 | 77.40 | 77.55 | 78.95 | 79.55 | 80.75 | **** | **** | **** | **** |
| 12 | 83.72 | 82.24 | 78.55 | 77.86 | 78.10 | 79.01 | 80.05 | 80.95 | **** | **** | **** | **** |
| 13 | 83.62 | 82.06 | 78.47 | 78.16 | 78.59 | 79.25 | 80.51 | 81.27 | **** | **** | **** | **** |
| 14 | 83.38 | 81.89 | 79.28 | 78.50 | 79.01 | 79.38 | 80.55 | 81.40 | **** | **** | **** | **** |
| 15 | 83.40 | 81.72 | 79.68 | 79.00 | 79.13 | 79.55 | 80.74 | 81.60 | **** | **** | **** | **** |
| 16 | 83.55 | 81.80 | 79.70 | 79.15 | 79.85 | 79.44 | 80.80 | 81.42 | **** | **** | **** | **** |
| 17 | 83.42 | 81.55 | 79.65 | 79.21 | 79.95 | 79.15 | 80.69 | 81.45 | **** | **** | **** | **** |
| 18 | 83.48 | 81.17 | 79.80 | 79.57 | 80.05 | 79.12 | 80.40 | 81.20 | **** | **** | **** | **** |
| 19 | 83.66 | 81.20 | 79.70 | 79.52 | 80.42 | 79.25 | 79.85 | 81.05 | **** | **** | **** | **** |
| 20 | 83.45 | 81.07 | 79.60 | 79.39 | 80.84 | 79.70 | 79.41 | 81.30 | **** | **** | **** | **** |
| 21 | 83.08 | 80.25 | 79.45 | 79.51 | 81.03 | 79.82 | 79.40 | 81.52 | **** | **** | **** | **** |
| 22 | 82.91 | 79.52 | 79.55 | 79.72 | 80.95 | 79.77 | 79.09 | 82.05 | **** | **** | **** | **** |
| 23 | 82.83 | 79.38 | 79.95 | 80.10 | 80.74 | 79.83 | 78.75 | 82.37 | **** | **** | **** | **** |
| 24 | 82.66 | 79.55 | 79.60 | 80.62 | 80.55 | 79.76 | 78.84 | 82.41 | **** | **** | **** | **** |
| 25 | 82.65 | 79.45 | 79.62 | 80.65 | 80.59 | 79.74 | 79.12 | 81.72 | **** | **** | **** | **** |
| 26 | 82.62 | 79.91 | 79.88 | 80.57 | 80.40 | 79.80 | 79.00 | 81.38 | **** | **** | **** | **** |
| 27 | 82.67 | 80.41 | 79.90 | 80.31 | 79.50 | 80.00 | 78.90 | 81.75 | **** | **** | **** | **** |
| 28 | 82.51 | 80.68 | 79.67 | 80.49 | 78.62 | 79.97 | 78.65 | 81.80 | **** | **** | **** | **** |
| 29 | 82.50 | 80.75 | 79.29 | 80.64 | 78.17 | 79.72 | 78.15 | **** | **** | **** | **** | **** |
| 30 | 82.68 | 80.84 | 79.16 | 80.57 | ------ | 79.35 | 78.05 | **** | **** | **** | **** | **** |
| 31 | 82.75 | ------ | 79.10 | 80.59 | ------ | 78.42 | ------ | **** | ------ | **** | **** | ------ |
| MIN | 82.50 | 79.38 | 78.47 | 77.40 | 77.55 | 76.45 | 76.70 | 78.32 | **** | **** | **** | **** |
| MAX | 84.98 | 82.75 | 81.17 | 80.65 | 81.03 | 80.00 | 80.80 | 82.41 | **** | **** | **** | **** |
| MEAN | 83.49 | 81.42 | 79.90 | 79.23 | 79.58 | 78.96 | 78.84 | **** | **** | **** | **** | **** |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 18. Groundwater level data, WY 1991-1992, Washington observation well.

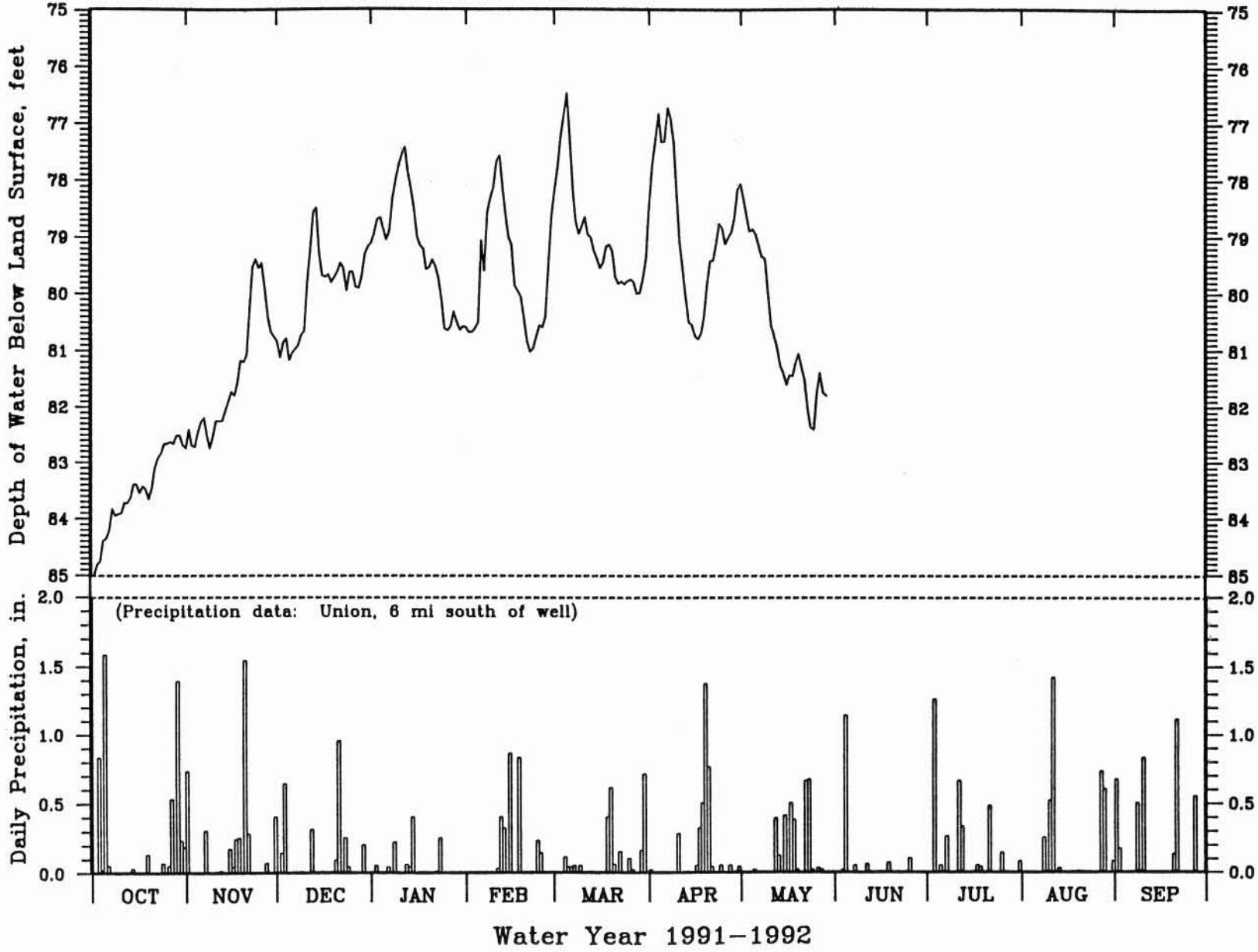



Figure 18. Water-level hydrograph and precipitation, Washington observation well.

FRANKLIN COUNTY: SE1/4 SE1/4 SEC. 26, T. 42 N., R. 01 W. DGLS LOG NUMBER: 14462
38 DEG 21 MIN 00 SEC NORTH LATITUDE, 90 DEG 59 MIN 28 SEC WEST LONGITUDE WELL OWNER: MO. HWY. DEPT.
LAND SURFACE ELEVATION: 739 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX 3.0 FT ABOVE LAND SURFACE
TOTAL DEPTH: 255 FEET WELL DIAMETER: 8 INCHES
CASING: 80 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED (NOTE: **** DENOTES MISSING DATA)
FORMATIONS OPEN TO WELL: ROUBIDOUX FORMATION AND GASCONADE DOLOMITE
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1980), GRAPHIC RECORDER INSTALLED IN 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 68.70 | 67.78 | 67.93 | 67.38 | 67.36 | 66.80 | **** | **** | **** | 67.70 | 68.16 | 67.97 |
| 2 | 68.67 | 68.07 | 67.57 | 67.22 | 67.32 | 66.81 | **** | **** | **** | 67.68 | 68.08 | 67.08 |
| 3 | 68.69 | 68.11 | 67.49 | 67.25 | 67.29 | 66.82 | **** | **** | **** | 67.69 | 68.07 | 68.00 |
| 4 | 68.60 | 68.07 | 67.66 | 67.37 | 67.30 | 66.81 | **** | **** | 66.65 | 67.86 | 68.15 | 68.06 |
| 5 | 68.64 | 67.92 | 67.41 | 67.36 | 67.26 | 66.78 | **** | **** | 66.66 | 67.66 | 68.20 | 68.05 |
| 6 | 68.57 | 68.04 | 67.40 | 67.40 | 67.14 | 66.77 | **** | **** | 66.70 | 67.65 | 68.23 | 68.10 |
| 7 | 68.43 | 68.29 | 67.31 | 67.42 | 67.22 | 66.94 | **** | **** | 66.92 | 67.63 | 68.17 | 68.13 |
| 8 | 68.34 | 68.41 | 67.38 | 67.31 | 67.42 | 67.05 | **** | **** | 66.93 | 67.66 | 68.19 | 68.15 |
| 9 | 68.42 | 68.32 | 67.61 | 67.42 | 67.53 | 66.91 | **** | **** | 66.95 | 67.68 | 68.27 | 67.97 |
| 10 | 68.46 | 68.28 | 67.63 | 67.50 | 67.47 | **** | **** | **** | 66.97 | 67.75 | 68.20 | 68.05 |
| 11 | 68.35 | 68.42 | 67.63 | 67.39 | 67.56 | **** | **** | **** | 67.07 | 67.65 | 68.15 | 68.10 |
| 12 | 68.49 | 68.45 | 67.43 | 67.24 | 67.48 | **** | **** | **** | 67.09 | 67.45 | 68.16 | 67.95 |
| 13 | 68.56 | 68.37 | 67.57 | 67.19 | 67.36 | **** | **** | **** | 67.03 | 67.48 | 68.16 | 67.88 |
| 14 | 68.51 | 68.40 | 67.86 | 67.39 | 67.11 | **** | **** | **** | 67.07 | 67.48 | 68.21 | 67.94 |
| 15 | 68.61 | 68.51 | 67.89 | 67.56 | 66.93 | **** | **** | **** | 67.14 | 67.56 | 68.23 | 68.00 |
| 16 | 68.69 | 68.59 | 67.78 | 67.48 | 67.06 | **** | **** | **** | 67.16 | 67.62 | 68.19 | 68.02 |
| 17 | 68.66 | 68.35 | 67.82 | 67.46 | 66.85 | **** | **** | **** | 67.20 | 67.73 | 68.20 | 67.97 |
| 18 | 68.79 | 68.14 | 68.06 | 67.67 | 66.55 | **** | **** | **** | 67.32 | 67.82 | 68.21 | 68.02 |
| 19 | 68.96 | 68.20 | 68.10 | 67.53 | 66.66 | **** | **** | **** | 67.38 | 67.81 | 68.21 | 68.15 |
| 20 | 68.86 | 68.04 | 67.96 | 67.44 | 66.70 | **** | **** | **** | 67.43 | 67.81 | 68.24 | 67.90 |
| 21 | 68.78 | 67.74 | 67.77 | 67.38 | 66.62 | **** | **** | **** | 67.55 | 67.75 | 68.27 | 67.75 |
| 22 | 68.80 | 67.60 | 67.30 | 67.20 | 66.57 | **** | **** | **** | 67.52 | 67.65 | 68.28 | 67.86 |
| 23 | 68.85 | 67.67 | 67.13 | 67.20 | 66.53 | **** | **** | **** | 67.42 | 67.70 | 68.27 | 67.94 |
| 24 | 68.89 | 67.78 | 67.39 | 67.46 | 66.62 | **** | **** | **** | 67.41 | 67.76 | 68.33 | 67.85 |
| 25 | 68.97 | 67.91 | 67.38 | 67.37 | 66.65 | **** | **** | **** | 67.49 | 67.78 | 68.35 | 67.80 |
| 26 | 68.94 | 67.81 | 67.37 | 67.54 | 66.58 | **** | **** | **** | 67.63 | 67.50 | 68.33 | 67.85 |
| 27 | 68.90 | 67.79 | 67.46 | 67.43 | 66.53 | **** | **** | **** | 67.72 | 67.82 | 68.15 | 67.92 |
| 28 | 68.79 | 67.77 | 67.32 | 67.50 | 66.50 | **** | **** | **** | 67.65 | 67.93 | 68.06 | 67.99 |
| 29 | 68.67 | 67.73 | 67.30 | 67.39 | 66.82 | **** | **** | **** | 67.66 | 67.92 | 68.02 | 68.02 |
| 30 | 68.50 | 67.91 | 67.42 | 67.19 | ------ | **** | **** | **** | 67.66 | 67.90 | 68.06 | 67.97 |
| 31 | 68.07 | ------ | 67.47 | 67.26 | ------ | **** | ------ | **** | ------ | 68.07 | 68.09 | ------ |
| MIN | 68.07 | 67.60 | 67.13 | 67.19 | 66.50 | 66.77 | **** | **** | 66.65 | 67.45 | 68.02 | 67.08 |
| MAX | 68.97 | 68.59 | 68.10 | 67.67 | 67.56 | 67.05 | **** | **** | 67.72 | 68.07 | 68.35 | 68.15 |
| MEAN | 68.65 | 68.08 | 67.57 | 67.38 | 67.00 | **** | **** | **** | **** | 67.71 | 68.19 | 67.95 |

1992 EXTREMES: MINIMUM - 66.50 (FEB 28), MAXIMUM - 68.97 (OCT 25), AVERAGE - ****

Table 19. Groundwater level data, WY 1991-1992, St. Clair observation well.

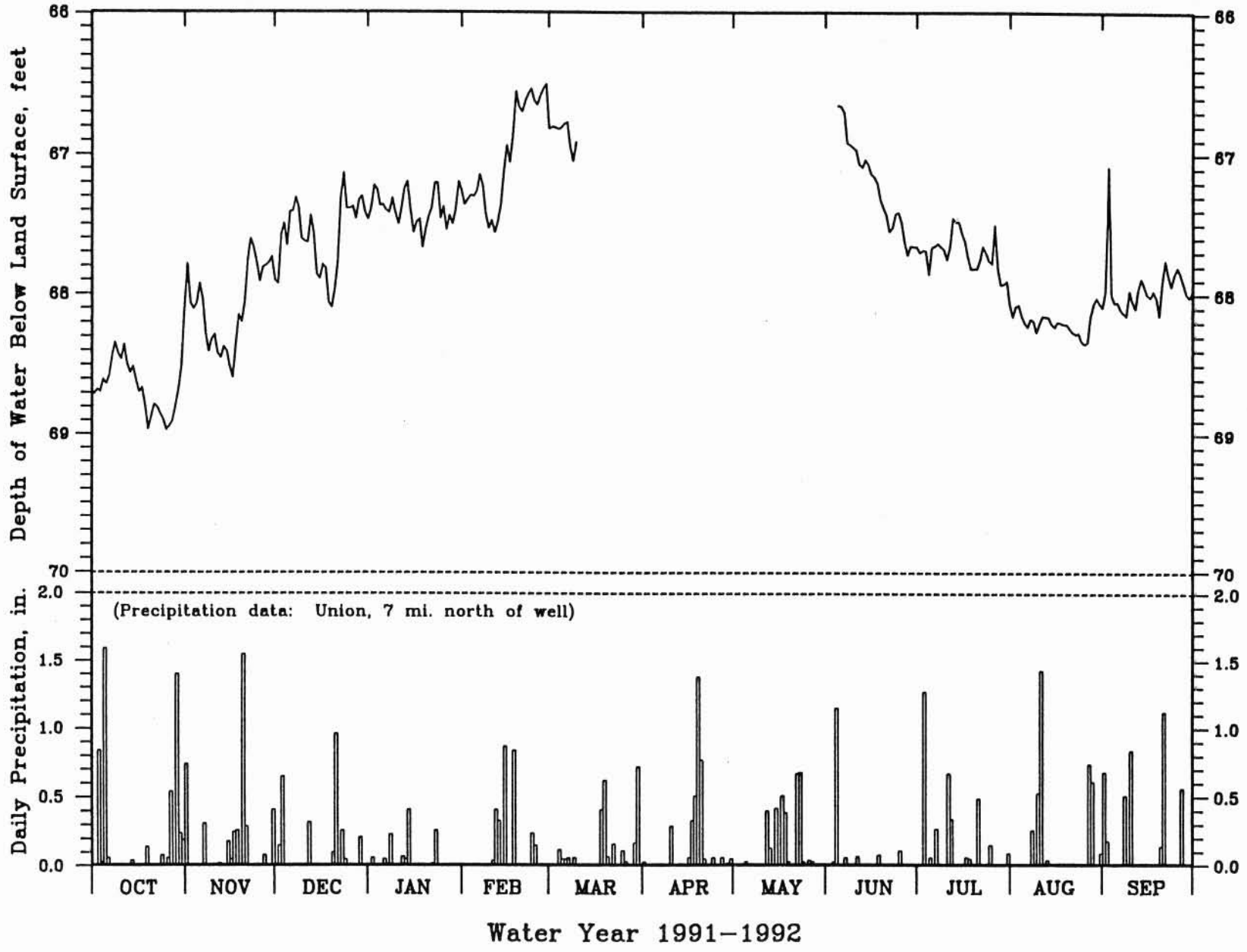



Figure 19. Water-level hydrograph and precipitation, St. Clair observation well.

PETTIS COUNTY: NE1/4 SW1/4 SEC. 34, T. 47 N., R. 22 W. DGLS LOG NUMBER: 26814
38 DEG 48 MIN 32 SEC NORTH LATITUDE, 93 DEG 19 MIN 49 SEC WEST LONGITUDE WELL OWNER: OLIVER FUNK
LAND SURFACE ELEVATION: 825 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 2.9 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 1410 FEET WELL DIAMETER: 14 INCHES
CASING: 432 FEET OF 14 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: JEFFERSON CITY DOL., ROUBIDOUX FM., GASCONADE DOL., EMINENCE DOL., POTOSI DOL., DERBY-DOERUN DOL., AND DAVIS FM.
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1973, 19 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 152.40 | **** | **** | **** | 152.65 | 152.86 | 152.74 | 153.02 | 152.37 | 152.48 | 152.30 | 152.20 |
| 2 | 152.24 | **** | **** | **** | 152.64 | 152.84 | 152.77 | 152.95 | 152.40 | 152.51 | 152.33 | 152.27 |
| 3 | 152.18 | **** | **** | **** | 152.65 | 152.85 | 152.88 | 152.88 | 152.45 | 152.35 | 152.33 | 152.22 |
| 4 | 152.17 | **** | **** | **** | 152.63 | 152.55 | 152.86 | 152.94 | 152.50 | 152.38 | 152.30 | 152.19 |
| 5 | 152.50 | **** | **** | **** | 152.69 | 152.73 | 152.80 | 152.20 | 152.50 | 152.41 | 152.29 | 152.22 |
| 6 | 152.66 | **** | **** | **** | 152.76 | 152.75 | 152.84 | 152.18 | 152.48 | 152.39 | 152.28 | 152.23 |
| 7 | 152.53 | **** | **** | **** | 152.74 | 152.69 | 152.82 | 152.13 | 152.39 | 152.40 | 152.34 | 152.22 |
| 8 | 152.39 | **** | **** | **** | 152.67 | 152.68 | 152.86 | 152.22 | 152.38 | 152.38 | 152.33 | 152.18 |
| 9 | 152.49 | **** | **** | **** | 152.66 | 152.80 | 152.86 | 152.27 | 152.41 | 152.37 | 152.29 | 152.27 |
| 10 | 152.55 | **** | **** | **** | 152.68 | 152.66 | 152.93 | 152.26 | 152.41 | 152.35 | 152.30 | 152.13 |
| 11 | 152.36 | **** | **** | **** | 152.63 | 152.67 | 152.87 | 152.31 | 152.38 | 152.40 | 152.25 | 152.11 |
| 12 | 152.48 | **** | **** | **** | 152.71 | 152.66 | 152.70 | 152.30 | 152.40 | 152.42 | 152.23 | 152.15 |
| 13 | 152.43 | **** | **** | **** | 152.75 | 152.65 | 152.76 | 152.25 | 152.46 | 152.45 | 152.21 | 152.21 |
| 14 | 152.48 | **** | **** | **** | 152.91 | 152.64 | 152.83 | 152.29 | 152.48 | 152.43 | 152.20 | 152.20 |
| 15 | 152.54 | **** | **** | **** | 152.85 | 152.58 | 152.87 | 152.30 | 152.48 | 152.40 | 152.18 | 152.17 |
| 16 | 152.55 | **** | **** | **** | 152.76 | 152.70 | 152.86 | 152.32 | 152.50 | 152.39 | 152.20 | 152.19 |
| 17 | 152.47 | **** | **** | 152.55 | 152.91 | 152.73 | 152.88 | 152.25 | 152.50 | 152.35 | 152.21 | 152.24 |
| 18 | 152.74 | **** | **** | 152.50 | 152.86 | 152.85 | 153.00 | 152.23 | 152.44 | 152.32 | 152.23 | 152.21 |
| 19 | 152.91 | **** | **** | 152.57 | 152.73 | 152.71 | 153.05 | 152.25 | 152.42 | 152.34 | 152.22 | 152.20 |
| 20 | 152.74 | **** | **** | 152.60 | 152.75 | 152.65 | 153.07 | 152.25 | 152.39 | 152.41 | 152.21 | 152.33 |
| 21 | 152.53 | **** | **** | 152.67 | 152.76 | 152.78 | 153.00 | 152.25 | 152.33 | 152.40 | 152.21 | 152.30 |
| 22 | 152.46 | **** | **** | 152.80 | 152.80 | 152.75 | 152.92 | 152.26 | 152.37 | 152.42 | 152.22 | 152.13 |
| 23 | 152.43 | **** | **** | 152.77 | 152.83 | 152.73 | 152.93 | 152.25 | 152.45 | 152.37 | 152.22 | 152.08 |
| 24 | 152.44 | **** | **** | 152.70 | 152.80 | 152.75 | 152.87 | 152.26 | 152.48 | 152.30 | 152.22 | 152.12 |
| 25 | 152.57 | **** | **** | 152.66 | 152.76 | 152.76 | 152.87 | 152.31 | 152.45 | 152.32 | 152.18 | 152.20 |
| 26 | 152.54 | **** | **** | 152.58 | 152.85 | 152.75 | 152.84 | 152.32 | 152.38 | 152.36 | 152.18 | 152.17 |
| 27 | 152.58 | **** | **** | 152.57 | 152.87 | 152.67 | 152.82 | 152.31 | 152.37 | 152.35 | 152.17 | 152.12 |
| 28 | 152.49 | **** | **** | 152.53 | 152.90 | 152.74 | 152.88 | 152.31 | 152.42 | 152.33 | 152.17 | 152.05 |
| 29 | **** | **** | **** | 152.58 | 152.79 | 152.80 | 152.95 | 152.35 | 152.43 | 152.37 | 152.22 | 152.01 |
| 30 | **** | **** | **** | 152.66 | ------ | 152.73 | 152.99 | 152.34 | 152.46 | 152.36 | 152.17 | 152.04 |
| 31 | **** | ------ | **** | 152.64 | ------ | 152.77 | ------ | 152.32 | ------ | 152.31 | 152.16 | ------ |
| MIN | 152.17 | **** | **** | 152.50 | 152.63 | 152.55 | 152.70 | 152.13 | 152.33 | 152.30 | 152.16 | 152.01 |
| MAX | 152.91 | **** | **** | 152.80 | 152.91 | 152.86 | 153.07 | 153.02 | 152.50 | 152.51 | 152.34 | 152.33 |
| MEAN | **** | **** | **** | **** | 152.76 | 152.73 | 152.88 | 152.36 | 152.43 | 152.38 | 152.24 | 152.18 |

1992 EXTREMES: MINIMUM - 152.01 (SEP 29), MAXIMUM - 153.07 (APR 20), MEAN - ****

Table 20. Groundwater level data, WY 1991-1992, Sedalia observation well.

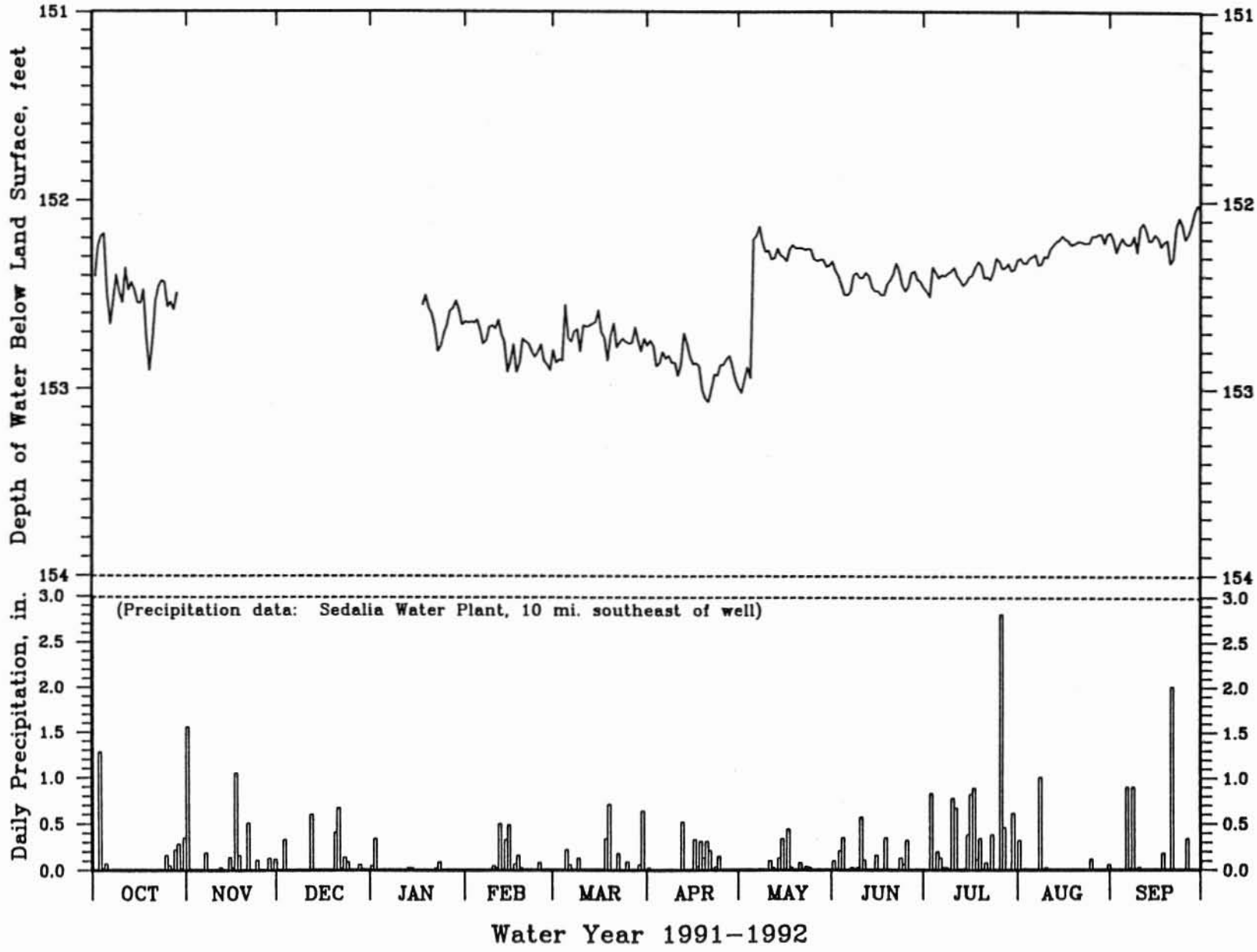



Figure 20. Water-level hydrograph and precipitation, Sedalia observation well.

BENTON COUNTY: NE1/4 NW1/4 SEC. 4, T. 40 N., R. 22 W. DGLS LOG NUMBER: 14232
38 DEG 16 MIN 52 SEC NORTH LATITUDE, 93 DEG 21 MIN 55 SEC WEST LONGITUDE WELL OWNER: CORPS OF ENGINEERS
LAND SURFACE ELEVATION: 747 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.0 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 1406 FEET WELL DIAMETER: 12 INCHES
CASING: 210 FEET OF 12 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: GASCONADE DOL., EMINENCE DOL., POTOSI DOL., DERBY-DOERUN DOL., DAVIS FM., BONNETERRE FM., AND LAMOTTE SS.
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1979, 13 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 38.40 | 37.80 | 37.85 | 36.87 | 36.01 | 35.15 | 35.10 | 34.32 | 35.20 | 35.90 | 35.82 | 36.40 |
| 2 | 38.30 | 38.10 | 37.60 | 36.75 | 36.00 | 35.17 | 35.00 | 34.55 | 35.10 | 36.20 | 35.77 | 36.57 |
| 3 | 38.25 | 38.15 | 37.80 | 36.75 | 35.99 | 35.10 | 34.85 | 34.45 | 35.05 | 36.22 | 35.85 | 36.58 |
| 4 | 38.25 | 38.08 | 37.90 | 36.75 | 36.00 | 35.00 | 35.00 | 34.55 | 35.10 | 36.20 | 35.87 | 36.55 |
| 5 | 38.50 | 37.83 | 37.80 | 36.68 | 36.12 | 34.92 | 35.05 | 34.70 | 35.15 | 36.25 | 35.90 | 36.60 |
| 6 | 38.60 | 37.88 | 37.70 | 36.65 | 36.20 | 35.03 | 34.97 | 34.75 | 35.32 | 36.25 | 35.83 | 36.60 |
| 7 | 38.42 | 38.10 | 37.60 | 36.50 | 36.04 | 35.12 | 35.02 | 34.60 | 35.30 | 36.30 | 36.10 | 36.60 |
| 8 | 38.43 | 38.13 | 37.70 | 36.50 | 35.90 | 34.95 | 34.92 | 34.58 | 35.30 | 36.35 | 35.95 | 36.55 |
| 9 | 38.30 | 37.92 | 37.90 | 36.65 | 35.98 | 34.98 | 34.90 | 34.65 | 35.30 | 36.35 | 36.05 | 36.75 |
| 10 | 38.32 | 37.84 | 37.90 | 36.68 | 36.05 | 35.20 | 34.82 | 34.60 | 35.40 | 36.25 | 36.15 | 36.82 |
| 11 | 38.17 | 37.85 | 37.77 | 36.50 | 36.00 | 35.07 | 35.13 | 34.65 | 35.45 | 36.15 | 36.18 | 36.70 |
| 12 | 38.20 | 37.80 | 37.65 | 36.32 | 35.87 | 35.17 | 35.20 | 34.85 | 35.35 | 36.13 | 36.22 | 36.65 |
| 13 | 38.15 | 37.65 | 37.90 | 36.38 | 35.75 | 35.12 | 35.00 | 34.80 | 35.30 | 36.15 | 35.27 | 36.70 |
| 14 | 38.15 | 37.50 | 38.10 | 35.50 | 35.44 | 35.25 | 34.82 | 34.85 | 35.30 | 36.15 | 36.27 | 36.75 |
| 15 | 38.18 | 37.65 | 38.09 | 36.68 | 35.65 | 35.30 | 34.85 | 34.92 | 35.25 | 35.85 | 36.25 | 36.70 |
| 16 | 38.15 | 37.72 | 37.90 | 36.43 | 35.50 | 35.00 | 34.85 | 35.10 | 35.20 | 35.80 | 36.23 | 36.78 |
| 17 | 38.05 | 37.50 | 37.95 | 36.60 | 35.20 | 34.92 | 34.70 | 35.18 | 35.35 | 35.75 | 36.22 | 36.62 |
| 18 | 38.28 | 37.33 | 38.15 | 36.65 | 35.35 | 35.25 | 34.50 | 35.15 | 35.38 | 35.80 | 36.24 | 36.75 |
| 19 | 38.42 | 37.50 | 38.05 | 36.50 | 35.50 | 35.40 | 34.38 | 35.15 | 35.42 | 35.77 | 36.24 | 36.95 |
| 20 | 38.25 | 37.65 | 37.90 | 36.40 | 35.37 | 35.30 | 34.40 | 35.16 | 35.58 | 35.75 | 36.30 | 36.75 |
| 21 | 38.00 | 37.58 | 37.75 | 36.20 | 35.30 | 35.10 | 34.50 | 35.15 | 35.50 | 35.82 | 36.28 | 36.50 |
| 22 | 38.00 | 37.50 | 37.35 | 36.03 | 35.20 | 35.23 | 34.42 | 35.20 | 35.40 | 35.80 | 36.28 | 36.50 |
| 23 | 37.97 | 37.64 | 37.30 | 36.20 | 35.17 | 35.19 | 34.45 | 35.20 | 35.40 | 35.75 | 36.33 | 36.65 |
| 24 | 37.98 | 37.78 | 37.45 | 36.20 | 35.30 | 35.12 | 34.50 | 35.10 | 35.42 | 35.80 | 36.35 | 36.70 |
| 25 | 38.05 | 37.83 | 37.35 | 36.30 | 35.25 | 35.08 | 34.48 | 35.17 | 35.60 | 35.85 | 36.40 | 36.65 |
| 26 | 38.03 | 37.65 | 37.30 | 36.33 | 35.10 | 35.20 | 34.52 | 35.22 | 35.65 | 35.90 | 36.40 | 36.55 |
| 27 | 38.00 | 37.62 | 37.25 | 36.37 | 35.08 | 35.20 | 34.45 | 35.20 | 35.70 | 35.90 | 36.40 | 36.40 |
| 28 | 37.85 | 37.53 | 37.08 | 36.35 | 35.17 | 35.00 | 34.33 | 35.20 | 35.80 | 35.88 | 36.35 | 36.50 |
| 29 | 38.05 | 37.37 | 37.00 | 36.20 | 35.25 | 35.10 | 34.30 | 35.25 | 35.80 | 35.82 | 36.50 | 36.60 |
| 30 | 38.23 | 37.70 | 37.05 | 35.90 | ------ | 35.10 | 34.25 | 35.30 | 35.85 | 36.05 | 36.50 | 36.70 |
| 31 | 37.80 | ------ | 37.07 | 35.85 | ------ | 35.12 | ------ | 35.27 | ------ | 35.92 | 36.45 | ------ |
| MIN | 37.80 | 37.33 | 37.00 | 35.50 | 35.08 | 34.92 | 34.25 | 34.32 | 35.05 | 35.75 | 35.27 | 36.40 |
| MAX | 38.60 | 38.15 | 38.15 | 36.87 | 36.20 | 35.40 | 35.20 | 35.30 | 35.85 | 36.35 | 36.50 | 36.95 |
| MEAN | 38.18 | 37.74 | 37.65 | 36.41 | 35.61 | 35.12 | 34.72 | 34.93 | 35.40 | 36.00 | 36.16 | 36.64 |

1992 EXTREMES: MINIMUM - 34.25 (APR 30), MAXIMUM - 38.60 (OCT 6), MEAN - 36.22

Table 21. Groundwater level data, WY 1991-1992, Warsaw observation well.

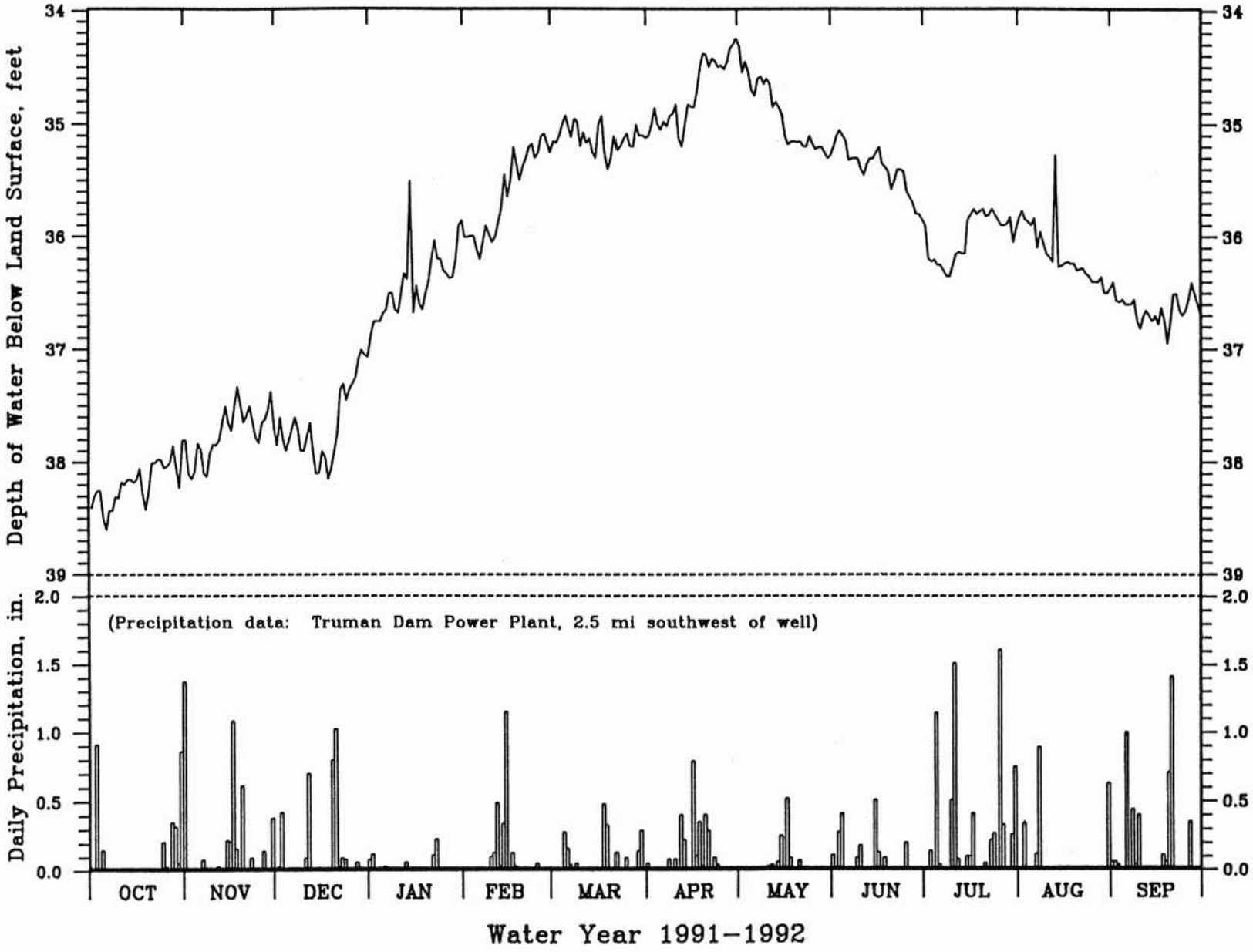



Figure 21. Water-level hydrograph and precipitation, Warsaw observation well.

ST. CLAIR COUNTY: NW1/4 SW1/4 SEC. 22, T. 38 N., R. 26 W. DGLS LOG NUMBER: 17450
38 DEG 02 MIN 29 SEC NORTH LATITUDE, 93 DEG 46 MIN 47 SEC WEST LONGITUDE WELL OWNER: KATHRYN WIXTED
LAND SURFACE ELEVATION: 875 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.8 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 875 FEET WELL DIAMETER: 6 INCHES
CASING: 20 FEET OF 6 INCH STEEL CASING, NOT PRESSURE GROUTED
FORMATIONS OPEN TO WELL: PENNSYLVANIAN (UNDIFFERENTIATED), SEDALIA FM., CHOUTEAU GP., JEFFERSON CITY DOL., ROUBIDOUX FM., GASCONADE DOL., EMINENCE DOL.
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1958, 34 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 105.95 | 106.50 | **** | **** | **** | **** | **** | **** | 106.98 | 106.75 | 106.49 | 106.30 |
| 2 | 105.71 | **** | **** | **** | **** | **** | **** | **** | 106.95 | 106.82 | 106.55 | 106.20 |
| 3 | 106.00 | **** | **** | **** | **** | **** | **** | **** | 106.90 | 106.48 | 106.62 | 106.17 |
| 4 | 106.25 | **** | **** | **** | **** | **** | **** | **** | 106.85 | 106.57 | 106.62 | 106.15 |
| 5 | 106.50 | **** | **** | **** | **** | **** | **** | **** | 106.60 | 106.55 | 106.08 | 106.12 |
| 6 | 106.50 | **** | **** | **** | 105.95 | **** | **** | 106.70 | 106.60 | 106.58 | 106.10 | 106.35 |
| 7 | 106.45 | **** | **** | **** | 105.85 | **** | **** | 106.65 | 106.70 | 106.55 | 106.22 | 106.20 |
| 8 | 106.40 | **** | **** | **** | 105.65 | **** | **** | 106.60 | 106.73 | 106.50 | 106.15 | 105.98 |
| 9 | 106.45 | **** | **** | **** | **** | **** | **** | 106.72 | 106.70 | 106.53 | 106.08 | 105.95 |
| 10 | 106.45 | **** | **** | **** | **** | **** | **** | 106.70 | 106.60 | 106.50 | 106.12 | 106.00 |
| 11 | 106.23 | **** | **** | **** | **** | **** | **** | 106.77 | 106.65 | 106.55 | 106.03 | 106.15 |
| 12 | 106.32 | **** | **** | **** | **** | **** | **** | 106.87 | 106.72 | 106.70 | 106.00 | 106.25 |
| 13 | 106.25 | **** | **** | **** | **** | **** | **** | 106.67 | 106.82 | 106.67 | 105.97 | 106.25 |
| 14 | 106.27 | **** | **** | **** | **** | **** | **** | 106.70 | 106.82 | 106.70 | 106.03 | 106.20 |
| 15 | 106.35 | **** | **** | **** | **** | **** | **** | 106.72 | 106.81 | 106.67 | 106.07 | 106.15 |
| 16 | 106.38 | **** | **** | **** | **** | **** | **** | 106.68 | 106.87 | 106.70 | 106.12 | 106.20 |
| 17 | 106.25 | **** | **** | **** | **** | **** | **** | 106.62 | 106.75 | 106.61 | 106.10 | 106.28 |
| 18 | 106.40 | **** | **** | **** | **** | **** | **** | 106.50 | 106.62 | 106.50 | 106.10 | 105.67 |
| 19 | 106.50 | **** | **** | **** | **** | **** | **** | 106.55 | 106.65 | 106.53 | 106.15 | 105.60 |
| 20 | 106.50 | **** | **** | **** | **** | **** | **** | 106.52 | 106.60 | 106.57 | 106.10 | 105.90 |
| 21 | 106.25 | **** | **** | **** | **** | **** | **** | 106.60 | 106.67 | 106.52 | 106.12 | 105.87 |
| 22 | 106.15 | **** | **** | **** | **** | **** | **** | 106.73 | 106.80 | 106.50 | 106.12 | 105.50 |
| 23 | 106.12 | **** | **** | **** | **** | **** | **** | 106.65 | 106.83 | 106.55 | 106.17 | 105.30 |
| 24 | 106.15 | **** | **** | **** | **** | **** | **** | 106.62 | 106.72 | 106.62 | 106.25 | 105.40 |
| 25 | 106.28 | **** | **** | **** | **** | **** | **** | 106.65 | 106.50 | 106.63 | 106.12 | 105.60 |
| 26 | 106.30 | **** | **** | **** | **** | **** | **** | 106.63 | 106.48 | 106.57 | 106.15 | 105.60 |
| 27 | 106.32 | **** | **** | **** | **** | **** | **** | 106.60 | 106.58 | 106.62 | 106.30 | 105.40 |
| 28 | 106.15 | **** | **** | **** | **** | **** | **** | 106.57 | 106.65 | 106.65 | 106.35 | 105.32 |
| 29 | 106.17 | **** | **** | **** | **** | **** | **** | 106.63 | 106.67 | 106.72 | 106.30 | **** |
| 30 | 106.10 | **** | **** | **** | ------ | **** | **** | 106.75 | 106.72 | 106.62 | 106.12 | **** |
| 31 | 106.08 | ------ | **** | **** | ------ | **** | ------ | 106.88 | ------ | 106.48 | 106.18 | ------ |
| MIN | 105.71 | **** | **** | **** | **** | **** | **** | 106.50 | 106.48 | 106.48 | 105.97 | 105.30 |
| MAX | 106.50 | **** | **** | **** | **** | **** | **** | 106.88 | 106.98 | 106.82 | 106.62 | 106.35 |
| MEAN | 106.26 | **** | **** | **** | **** | **** | **** | **** | 106.72 | 106.60 | 106.19 | **** |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 22. Groundwater level data, WY 1991-1992, Osceola observation well.

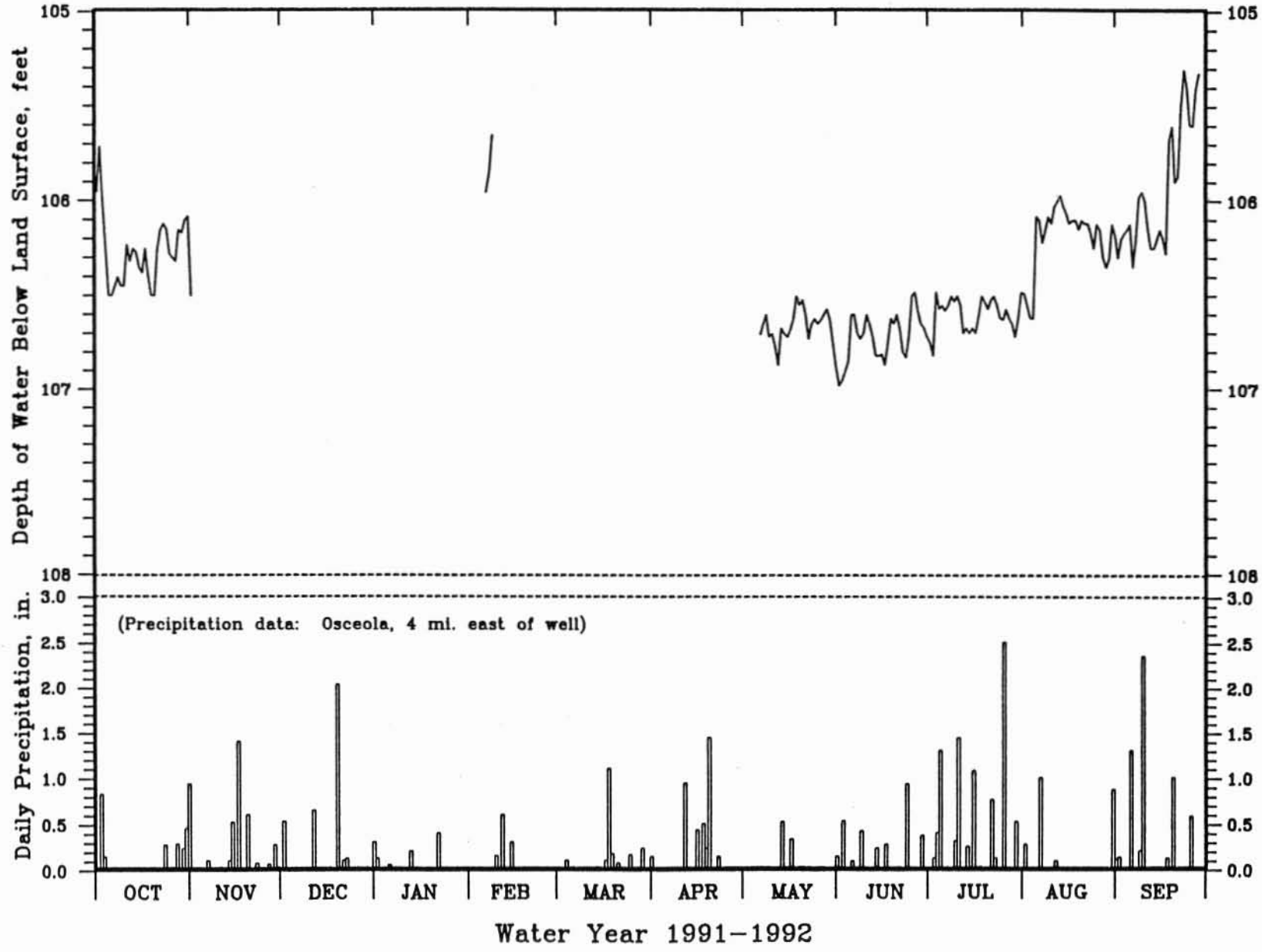



Figure 22. Water-level hydrograph and precipitation, Osceola observation well.

VERNON COUNTY: SE1/4 SW1/4 SEC. 31, T. 37 N., R. 32 W. DGLS LOG NUMBER: 8617
37 DEG 56 MIN 36 SEC NORTH LATITUDE, 94 DEG 29 MIN 56 SEC WEST LONGITUDE WELL OWNER: NA
LAND SURFACE ELEVATION: 804 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 2.0 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 2325 FEET WELL DIAMETER: 0 INCHES
CASING: 0 FEET OF 0 INCH 0 CASING, NOT PRESSURE GROUTED
FORMATIONS OPEN TO WELL: CHEROKEE THROUGH PRECAMBRIAN
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1988, 4 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 94.61 | 94.64 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 2 | 94.48 | 94.76 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 3 | 94.35 | 94.88 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 4 | 94.33 | 94.86 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 5 | 94.63 | 94.75 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 6 | 94.81 | 94.69 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 7 | 94.73 | 94.82 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 8 | 94.56 | 94.93 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 9 | 94.70 | 94.83 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 10 | 94.78 | 94.72 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 11 | 94.75 | 94.72 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 12 | 94.72 | 94.72 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 13 | 94.72 | 94.64 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 14 | 94.70 | 94.58 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 15 | 94.69 | 94.57 | 94.56 | 94.51 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 16 | 94.69 | 94.57 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 17 | 94.67 | 94.57 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 18 | 94.69 | 94.57 | 94.57 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 19 | 94.84 | 94.57 | 94.57 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 20 | 94.85 | 94.57 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| 21 | 94.78 | 94.57 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 94.47 |
| 22 | 94.66 | 94.57 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 94.47 |
| 23 | 94.65 | 94.57 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 94.47 |
| 24 | 94.64 | 94.57 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 92.40 |
| 25 | 94.64 | 94.61 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 92.30 |
| 26 | 94.64 | 94.58 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 92.33 |
| 27 | 94.64 | 94.57 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 92.45 |
| 28 | 94.61 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 92.53 |
| 29 | 94.59 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 92.61 |
| 30 | 94.78 | 94.56 | 94.56 | 94.48 | ------ | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 92.54 |
| 31 | 94.71 | ------ | 94.56 | 94.48 | ------ | 94.48 | ------ | 94.48 | ------ | 94.47 | 94.47 | ------ |
| MIN | 94.33 | 94.56 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 | 92.30 |
| MAX | 94.85 | 94.93 | 94.57 | 94.56 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.47 |
| MEAN | 94.67 | 94.66 | 94.56 | 94.52 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.48 | 94.47 | 94.00 |

1992 EXTREMES: MINIMUM - 92.30 (SEP 25), MAXIMUM - 94.93 (NOV 8), MEAN - 94.48

Table 23. Groundwater level data, WY 1991-1992, Nevada West observation well.

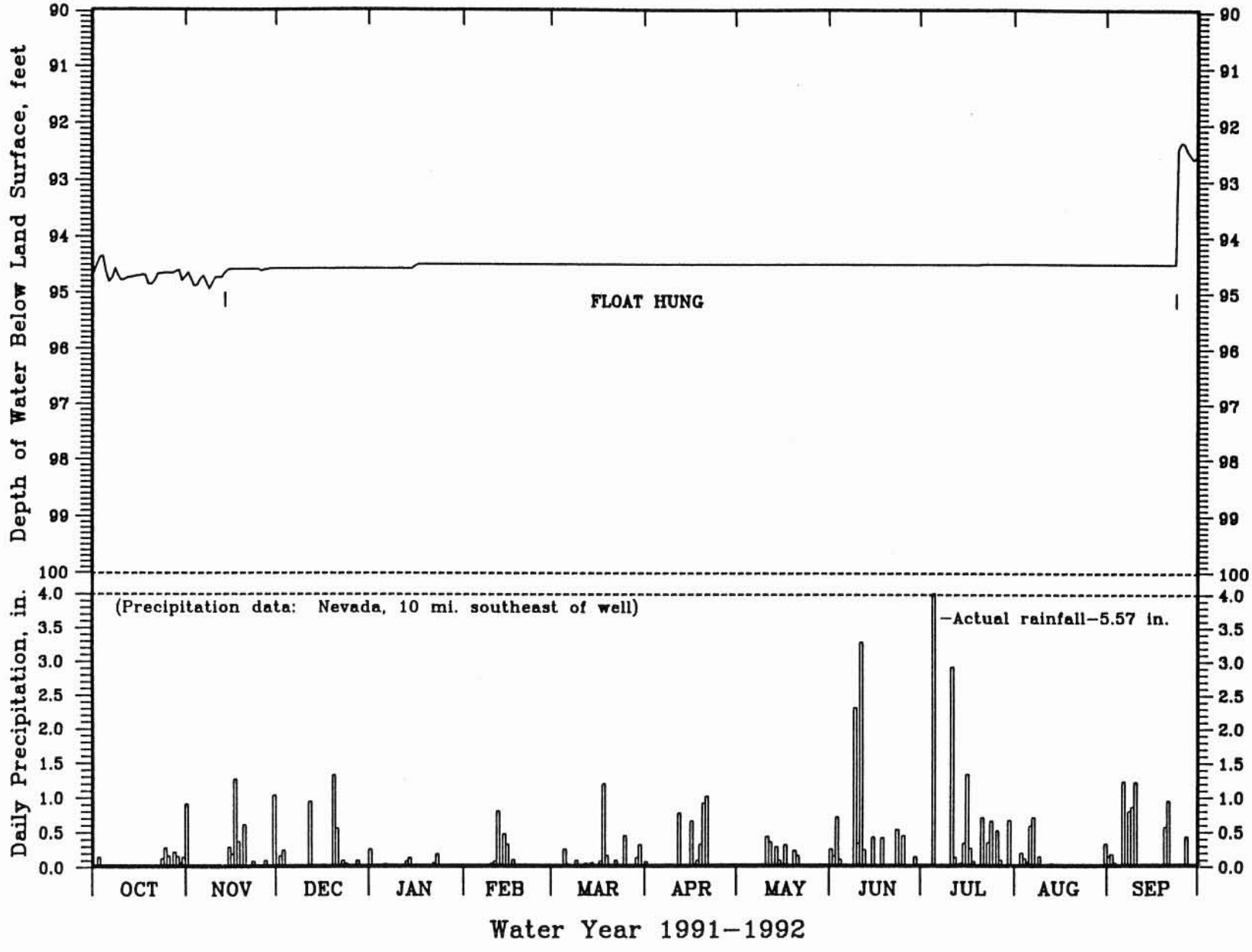



Figure 23. Water-level hydrograph and precipitation, Nevada West observation well.

VERNON COUNTY: NE1/4 SW1/4 SEC. 6, T. 35 N., R. 29 W. DGLS LOG NUMBER: NONE
37 DEG 50 MIN 07 SEC NORTH LATITUDE, 94 DEG 10 MIN 27 SEC WEST LONGITUDE WELL OWNER: TED ABELE
LAND SURFACE ELEVATION: 822 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.3 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 525 FEET WELL DIAMETER: 6 INCHES
CASING: NA
FORMATIONS OPEN TO WELL: PENNSYLVANIAN (UNDIFFERENTIATED) AND BURLINGTON LIMESTONE
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1978, 14 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 53.47 | 53.55 | 54.87 | 52.56 | 51.32 | 47.37 | 46.12 | 44.12 | 44.19 | 43.12 | 42.40 | 42.40 |
| 2 | 53.31 | 53.88 | 54.70 | 52.19 | 51.30 | 47.40 | 46.04 | 44.12 | 44.18 | 43.29 | 42.40 | 42.40 |
| 3 | 53.16 | 54.09 | 54.67 | 51.95 | 51.39 | 47.25 | 45.93 | 44.12 | 44.15 | 44.03 | 42.40 | 42.40 |
| 4 | 53.12 | 54.13 | 54.96 | 51.86 | 51.47 | 47.11 | 46.03 | 44.12 | 44.14 | 44.44 | 42.40 | 42.40 |
| 5 | 53.29 | 53.98 | 54.86 | 51.69 | 51.43 | 46.96 | 45.97 | 44.12 | 44.14 | 43.90 | 42.40 | 42.40 |
| 6 | 53.49 | 53.97 | 54.77 | 51.55 | 51.38 | 46.78 | 45.98 | 44.12 | 44.14 | 43.62 | 42.40 | 42.40 |
| 7 | 53.55 | 54.13 | 54.58 | 51.49 | 52.36 | 46.91 | 46.00 | 44.12 | 44.15 | 43.92 | 42.40 | 42.40 |
| 8 | 53.45 | 54.31 | 54.44 | 51.31 | 51.96 | 47.00 | 46.06 | 44.12 | 44.17 | 43.74 | 42.40 | 42.40 |
| 9 | 53.61 | 54.30 | 54.61 | 51.37 | 51.76 | 46.81 | 46.01 | 44.12 | 44.21 | 43.73 | 42.40 | 42.40 |
| 10 | 53.66 | 54.23 | 54.65 | 51.45 | 51.62 | 46.92 | 45.94 | 44.12 | 43.22 | 44.03 | 42.40 | 42.39 |
| 11 | 53.47 | 54.29 | 54.58 | 51.37 | 51.68 | 47.07 | 45.94 | 44.12 | 42.40 | 43.60 | 42.40 | 42.39 |
| 12 | 53.45 | 54.33 | 54.28 | 51.12 | 51.55 | 47.04 | 46.15 | 44.12 | 42.41 | 43.22 | 42.40 | 42.39 |
| 13 | 53.48 | 54.20 | 54.27 | 51.06 | 51.43 | 47.16 | 46.28 | 44.12 | 42.41 | 42.92 | 42.40 | 42.39 |
| 14 | 53.48 | 54.02 | 54.50 | 51.11 | 51.15 | 47.16 | 46.22 | 44.12 | 42.40 | 42.66 | 42.40 | 42.39 |
| 15 | 53.57 | 54.00 | 54.64 | 51.33 | 50.53 | 47.40 | 46.07 | 44.12 | 42.39 | 42.51 | 42.40 | 42.39 |
| 16 | 53.60 | 54.07 | 54.54 | 51.49 | 50.18 | 47.38 | 45.89 | 44.12 | 42.39 | 42.43 | 42.40 | 42.39 |
| 17 | 53.78 | 53.79 | 54.43 | 51.41 | 49.42 | 47.20 | 45.80 | 44.12 | 42.39 | 42.41 | 42.40 | 42.39 |
| 18 | 53.81 | 53.62 | 54.59 | 51.41 | 49.00 | 46.99 | 45.45 | 44.12 | 42.42 | 42.41 | 42.40 | 42.39 |
| 19 | 54.14 | 53.66 | 54.59 | 51.44 | 48.77 | 46.93 | 45.06 | 44.12 | 42.46 | 42.41 | 42.40 | 42.39 |
| 20 | 54.01 | 53.83 | 54.38 | 51.48 | 48.59 | 47.04 | 44.64 | 44.12 | 42.48 | 42.41 | 42.40 | 42.39 |
| 21 | 53.97 | 53.90 | 54.20 | 52.54 | 48.29 | 46.84 | 44.31 | 44.12 | 42.58 | 42.41 | 42.40 | 42.39 |
| 22 | 53.77 | 53.81 | 53.98 | 51.67 | 48.10 | 46.71 | 44.17 | 44.12 | 43.06 | 42.41 | 42.40 | 42.39 |
| 23 | 53.77 | 53.95 | 54.42 | 51.22 | 47.89 | 46.78 | 44.14 | 44.12 | 42.75 | 42.41 | 42.40 | 42.39 |
| 24 | 53.68 | 54.08 | 54.08 | 51.30 | 47.89 | 46.61 | 44.14 | 44.12 | 42.58 | 42.41 | 42.40 | 42.64 |
| 25 | 53.67 | 54.26 | 53.88 | 51.26 | 47.76 | 46.44 | 44.13 | 44.12 | 42.91 | 42.40 | 42.40 | 43.00 |
| 26 | 53.68 | 54.35 | 53.64 | 51.44 | 47.58 | 46.30 | 44.13 | 44.12 | 42.70 | 42.40 | 42.40 | 43.00 |
| 27 | 53.73 | 54.30 | 53.43 | 51.40 | 47.40 | 46.29 | 44.13 | 44.12 | 42.68 | 42.40 | 42.40 | 43.00 |
| 28 | 53.62 | 54.30 | 53.09 | 51.49 | 47.29 | 46.20 | 44.13 | 44.12 | 42.75 | 42.41 | 42.40 | 43.00 |
| 29 | 53.73 | 54.28 | 52.75 | 51.58 | 47.30 | 46.01 | 44.12 | 44.12 | 42.87 | 42.41 | 42.40 | 43.00 |
| 30 | 54.01 | 54.43 | 52.60 | 51.52 | ------ | 46.04 | 44.12 | 44.13 | 42.99 | 42.41 | 42.40 | 43.00 |
| 31 | 53.91 | ------ | 52.87 | 51.34 | ------ | 46.42 | ------ | 44.16 | ------ | 42.40 | 42.40 | ------ |
| MIN | 53.12 | 53.55 | 52.60 | 51.06 | 47.29 | 46.01 | 44.12 | 44.12 | 42.39 | 42.40 | 42.40 | 42.39 |
| MAX | 54.14 | 54.43 | 54.96 | 52.56 | 52.36 | 47.40 | 46.28 | 44.16 | 44.21 | 44.44 | 42.40 | 43.00 |
| MEAN | 53.63 | 54.07 | 54.22 | 51.53 | 49.92 | 46.86 | 45.30 | 44.12 | 43.09 | 42.94 | 42.40 | 42.52 |

1992 EXTREMES: MINIMUM - 42.39 (JUN 15), MAXIMUM - 54.96 (DEC 4), MEAN - 47.55

Table 24. Groundwater level data, WY 1991-1992, Nevada East observation well.

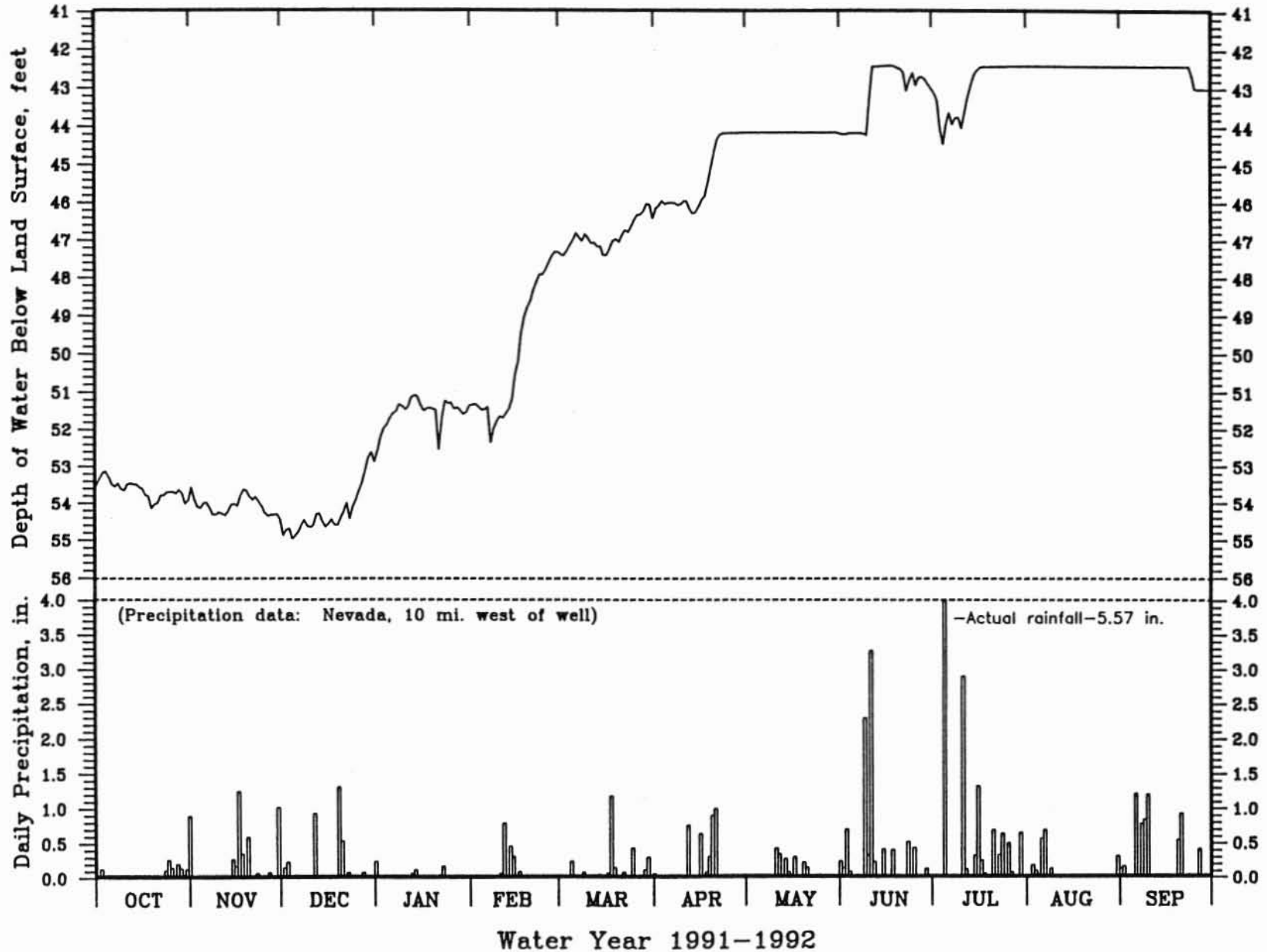



Figure 24. Water-level hydrograph and precipitation, Nevada East observation well.

POLK COUNTY: SE1/4 NE1/4 SEC. 5, T. 33 N., R. 21 W. DGLS LOG NUMBER: 14308
37 DEG 37 MIN 01 SEC NORTH LATITUDE, 93 DEG 15 MIN 16 SEC WEST LONGITUDE WELL OWNER: MO. HWY. DEPT.
LAND SURFACE ELEVATION: 1114 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 2.2 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 200 FEET WELL DIAMETER: 8 INCHES
CASING: 43 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED
FORMATIONS OPEN TO WELL: COTTER DOLOMITE AND JEFFERSON CITY DOLOMITE
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 58.99 | **** | **** | 60.20 | 59.23 | 61.35 | 59.30 | 58.40 | 57.50 | 59.10 | 58.15 | 59.68 |
| 2 | 58.84 | **** | **** | 60.35 | 59.15 | 61.20 | 59.00 | 58.25 | 57.25 | 59.25 | 58.15 | 59.70 |
| 3 | 58.66 | **** | **** | 60.45 | 59.05 | 61.15 | 59.70 | 58.15 | 56.88 | 59.45 | 58.10 | 59.60 |
| 4 | 58.41 | **** | **** | 60.45 | 59.05 | 61.30 | 59.65 | 58.10 | 56.65 | 59.20 | 58.00 | 60.00 |
| 5 | 58.64 | **** | **** | 60.50 | 59.05 | 61.35 | 59.15 | 57.90 | 56.70 | 58.90 | 57.95 | 60.75 |
| 6 | 58.79 | **** | **** | 60.35 | 59.17 | 61.15 | 58.80 | 56.75 | 56.70 | 58.95 | 57.75 | 61.17 |
| 7 | 58.65 | **** | **** | 60.30 | 59.00 | 60.95 | 58.65 | 56.75 | 56.90 | 58.85 | 57.70 | 61.15 |
| 8 | 58.50 | **** | **** | 60.40 | 58.80 | 61.00 | 58.35 | 56.72 | 57.25 | 58.95 | 57.85 | 61.05 |
| 9 | 58.55 | **** | **** | 60.22 | 58.72 | 61.10 | 58.60 | 56.75 | 57.35 | 59.25 | 57.90 | 61.00 |
| 10 | 58.90 | **** | **** | 59.97 | 58.65 | 60.70 | 58.75 | 57.00 | 57.10 | 59.50 | 57.95 | 60.75 |
| 11 | 58.80 | **** | 57.10 | 60.10 | 57.75 | 60.60 | 58.65 | 56.95 | 57.05 | 59.00 | 57.90 | 60.75 |
| 12 | 58.65 | **** | 57.45 | 60.22 | 56.75 | 60.50 | 58.40 | 56.75 | 56.95 | 58.65 | 58.05 | 60.65 |
| 13 | 58.85 | **** | 57.55 | 60.25 | 57.25 | 60.47 | 58.40 | 56.90 | 56.90 | 58.55 | 58.15 | 60.50 |
| 14 | 58.95 | **** | 57.45 | 60.05 | 59.10 | 60.25 | 59.00 | 56.85 | 57.05 | 58.65 | 58.15 | 60.35 |
| 15 | **** | **** | 57.30 | 59.70 | 60.50 | 60.10 | 58.20 | 56.65 | 57.20 | 58.75 | 58.35 | 60.00 |
| 16 | **** | **** | 57.45 | 59.65 | 61.00 | 59.80 | 57.75 | 56.75 | 57.15 | 58.70 | 58.55 | 60.05 |
| 17 | **** | **** | 57.45 | 59.20 | 61.50 | 60.10 | 58.40 | 56.90 | 57.15 | 58.62 | 58.75 | 60.02 |
| 18 | **** | **** | 57.20 | 59.20 | 61.55 | 60.32 | 58.90 | 56.75 | 57.65 | 58.55 | 59.05 | 59.55 |
| 19 | **** | **** | 57.15 | 59.30 | 61.30 | 60.05 | 59.10 | 56.90 | 58.75 | 58.58 | 59.00 | 59.05 |
| 20 | **** | **** | 57.55 | 59.42 | 61.20 | 59.95 | 59.30 | 56.65 | 58.75 | 58.60 | 59.15 | 58.50 |
| 21 | **** | **** | 58.40 | 59.50 | 61.37 | 60.25 | 59.35 | 56.50 | 58.50 | 58.70 | 59.40 | 58.10 |
| 22 | **** | **** | 59.50 | 59.55 | 61.60 | 60.15 | 59.35 | 56.50 | 58.75 | 58.95 | 59.45 | 58.30 |
| 23 | **** | **** | 60.10 | 59.60 | 61.60 | 60.05 | 59.35 | 56.45 | 58.40 | 59.30 | 59.35 | 58.45 |
| 24 | **** | **** | 59.97 | 59.40 | 61.35 | 60.02 | 59.20 | 56.45 | 58.50 | 59.45 | 59.25 | 58.35 |
| 25 | **** | **** | 60.17 | 59.40 | 61.40 | 60.10 | 59.18 | 56.55 | 58.75 | 59.25 | 59.45 | 58.40 |
| 26 | **** | **** | 60.37 | 59.30 | 61.50 | 59.80 | 59.05 | 56.65 | 59.25 | 59.20 | 59.35 | 58.55 |
| 27 | **** | **** | 60.30 | 59.20 | 61.45 | 59.75 | 59.00 | 56.80 | 59.15 | 59.10 | 59.15 | 58.35 |
| 28 | **** | **** | 60.35 | 59.10 | 61.50 | 59.90 | 59.12 | 56.80 | 58.85 | 59.15 | 59.35 | 58.30 |
| 29 | **** | **** | 60.55 | 59.18 | 61.38 | 59.95 | 58.85 | 56.75 | 58.90 | 58.75 | 59.40 | 58.95 |
| 30 | **** | **** | 60.15 | 59.37 | ------ | 59.60 | 58.65 | 57.00 | 59.00 | 58.75 | 59.48 | 59.00 |
| 31 | **** | ------ | 60.08 | 59.35 | ------ | 58.75 | ------ | 57.25 | ------ | 58.25 | 59.55 | ------ |
| MIN | **** | **** | 57.10 | 59.10 | 56.75 | 58.75 | 57.75 | 56.45 | 56.65 | 58.25 | 57.70 | 58.10 |
| MAX | **** | **** | 60.55 | 60.50 | 61.60 | 61.35 | 59.70 | 58.40 | 59.25 | 59.50 | 59.55 | 61.17 |
| MEAN | **** | **** | **** | 59.78 | 60.03 | 60.38 | 58.91 | 56.98 | 57.76 | 58.93 | 58.64 | 59.63 |

1992 EXTREMES: MINIMUM - 56.45 (MAY 23), MAXIMUM - 61.60 (FEB 22), MEAN - ****

Table 25. Groundwater level data, WY 1991-1992, Halfway observation well.

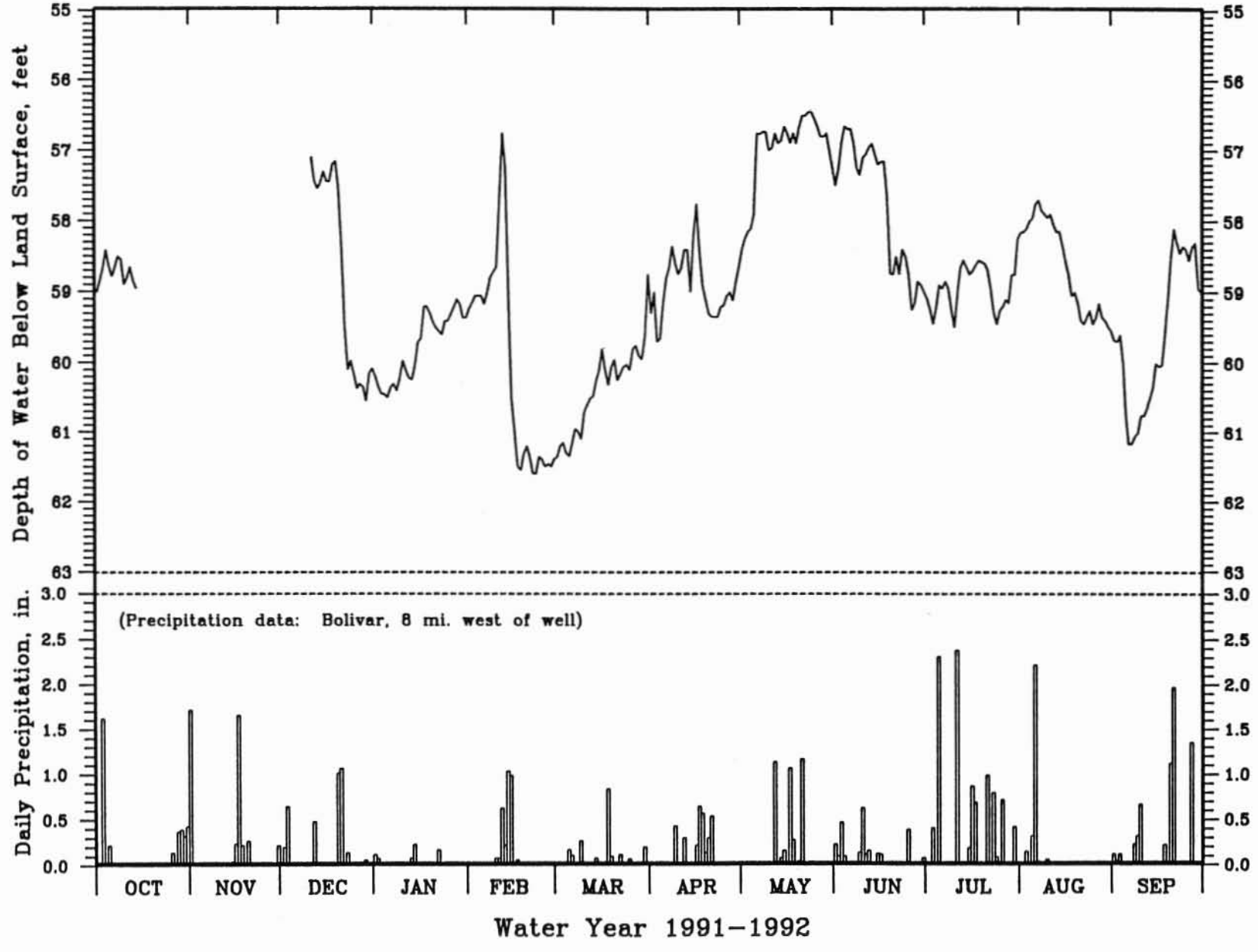



Figure 25. Water-level hydrograph and precipitation, Halfway observation well.

BARTON COUNTY: NW1/4 NE1/4 SEC. 30, T. 32 N., R. 30 W. DGLS LOG NUMBER: 12618
37 DEG 29 MIN 58 SEC NORTH LATITUDE, 94 DEG 16 MIN 11 SEC WEST LONGITUDE WELL OWNER: CITY OF LAMAR, WELL #2
LAND SURFACE ELEVATION: 975 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 2.3 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 981 FEET WELL DIAMETER: 8 INCHES
CASING: 575 FEET OF 8 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: COTTER DOL., JEFFERSON CITY DOL., ROUBIDOUX FM., AND GASCONADE DOL.
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1968, 24 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 296.10 | **** | 289.78 | 287.65 | 286.70 | 295.95 | 293.20 | 295.70 | 280.15 | 281.10 | 279.75 | 265.10 |
| 2 | 295.76 | **** | 289.70 | 287.75 | 287.70 | 295.80 | 293.30 | 295.40 | 280.10 | 281.05 | 279.90 | 270.50 |
| 3 | 295.43 | **** | 289.40 | 287.25 | 287.55 | 295.75 | 293.15 | 295.10 | 280.15 | 278.70 | 279.92 | 276.10 |
| 4 | 295.09 | **** | 289.70 | 287.25 | 287.45 | 295.55 | 293.78 | 294.85 | 280.20 | 278.50 | 279.97 | 285.30 |
| 5 | 294.75 | **** | 289.57 | 287.27 | 288.30 | 295.40 | 294.65 | 294.87 | 280.30 | 277.65 | 279.95 | 292.40 |
| 6 | 294.41 | **** | 289.15 | 287.35 | 289.15 | 295.20 | 295.10 | 294.60 | 280.30 | 277.85 | 279.87 | 297.05 |
| 7 | 294.08 | **** | 288.80 | 287.20 | 289.60 | 294.85 | 295.80 | 294.35 | 280.17 | 277.92 | 279.80 | 297.10 |
| 8 | 293.74 | **** | 289.00 | 286.90 | 289.85 | 294.70 | 296.25 | 294.37 | 280.25 | 278.00 | 279.85 | 296.65 |
| 9 | 293.40 | **** | 288.75 | 286.90 | 290.10 | 294.65 | 296.72 | 294.25 | 280.30 | 278.10 | 279.80 | 295.30 |
| 10 | **** | **** | 288.40 | 287.00 | 290.40 | 294.65 | 297.15 | 293.55 | 280.40 | 278.45 | 279.75 | 294.20 |
| 11 | **** | 293.35 | 288.32 | 287.10 | 290.65 | 294.40 | 297.35 | 293.35 | 280.35 | 278.60 | 279.75 | 293.35 |
| 12 | **** | 293.20 | 288.20 | 287.75 | 291.05 | 294.30 | 297.62 | 292.55 | 280.40 | 278.70 | 279.75 | 292.50 |
| 13 | **** | 292.75 | 287.95 | 286.40 | 291.25 | 294.50 | 297.85 | 291.05 | 280.50 | 278.80 | 279.70 | 291.60 |
| 14 | **** | 292.55 | 287.65 | 286.40 | 291.45 | 294.22 | 298.30 | 287.55 | 280.60 | 278.82 | 279.75 | 290.85 |
| 15 | **** | 292.25 | 287.50 | 286.55 | 291.75 | 294.25 | 298.80 | 284.05 | 280.60 | 278.84 | 279.90 | 290.23 |
| 16 | **** | 292.05 | 287.85 | 286.35 | 292.50 | 294.10 | 298.85 | 283.35 | 280.70 | 278.85 | 279.85 | 289.65 |
| 17 | **** | 291.85 | 288.00 | 286.25 | 293.50 | 294.80 | 299.00 | 282.25 | 280.75 | 278.82 | 279.10 | 288.80 |
| 18 | **** | 291.65 | 288.00 | 286.30 | 293.92 | 295.50 | 299.15 | 281.35 | 280.65 | 278.80 | 278.00 | 288.35 |
| 19 | **** | 291.35 | 288.50 | 286.35 | 294.25 | 294.85 | 299.35 | 281.15 | 280.70 | 278.92 | 277.20 | 287.80 |
| 20 | **** | 291.45 | 289.35 | 286.35 | 294.95 | 294.35 | 299.30 | 281.05 | 280.70 | 278.97 | 276.35 | 287.20 |
| 21 | **** | 291.65 | 289.90 | 286.70 | 295.00 | 294.15 | 299.30 | 280.90 | 280.65 | 279.08 | 275.50 | 286.80 |
| 22 | **** | 291.60 | 289.64 | 286.67 | 295.05 | 294.35 | 299.40 | 280.85 | 280.80 | 279.15 | 274.25 | 286.75 |
| 23 | **** | 291.35 | 289.20 | 286.40 | 295.40 | 294.15 | 299.15 | 280.80 | 281.00 | 279.18 | 272.85 | 286.35 |
| 24 | **** | 291.20 | 288.80 | 286.35 | 295.65 | 293.85 | 298.40 | 280.67 | 281.07 | 279.25 | 271.30 | 285.90 |
| 25 | **** | 291.13 | 288.60 | 286.65 | 296.00 | 294.00 | 297.85 | 280.50 | 281.05 | 279.35 | 269.60 | 285.50 |
| 26 | **** | 290.90 | 288.55 | 287.15 | 296.20 | 293.85 | 298.45 | 280.50 | 280.90 | 279.45 | 269.00 | 285.20 |
| 27 | **** | 290.85 | 288.40 | 287.00 | 296.30 | 293.72 | 297.25 | 280.42 | 280.95 | 279.50 | 268.85 | 285.00 |
| 28 | **** | 290.62 | 288.40 | 286.90 | 296.45 | 293.62 | 296.85 | 280.35 | 281.00 | 279.60 | 268.65 | 284.80 |
| 29 | **** | 290.40 | 288.40 | 286.70 | 296.20 | 293.60 | 296.60 | 280.25 | 281.10 | 279.75 | 267.95 | 284.65 |
| 30 | **** | 290.00 | 287.85 | 286.60 | ------ | 293.50 | 296.30 | 280.30 | 281.15 | 279.70 | 266.77 | 284.20 |
| 31 | **** | ------ | 287.65 | 286.65 | ------ | 293.20 | ------ | 280.25 | ------ | 279.65 | 265.70 | ------ |
| MIN | **** | 290.00 | 287.50 | 286.25 | 286.70 | 293.20 | 293.15 | 280.25 | 280.10 | 277.65 | 265.70 | 265.10 |
| MAX | **** | 293.35 | 289.90 | 287.75 | 296.45 | 295.95 | 299.40 | 295.70 | 281.15 | 281.10 | 279.97 | 297.10 |
| MEAN | **** | **** | 288.68 | 286.84 | 292.22 | 294.51 | 297.14 | 286.79 | 280.60 | 279.00 | 276.08 | 287.51 |

1992 EXTREMES: MINIMUM - 265.10 (SEP 1), MAXIMUM - 299.40 (APR 22), MEAN - ****

Table 26. Groundwater level data, WY 1991-1992, Lamar observation well.

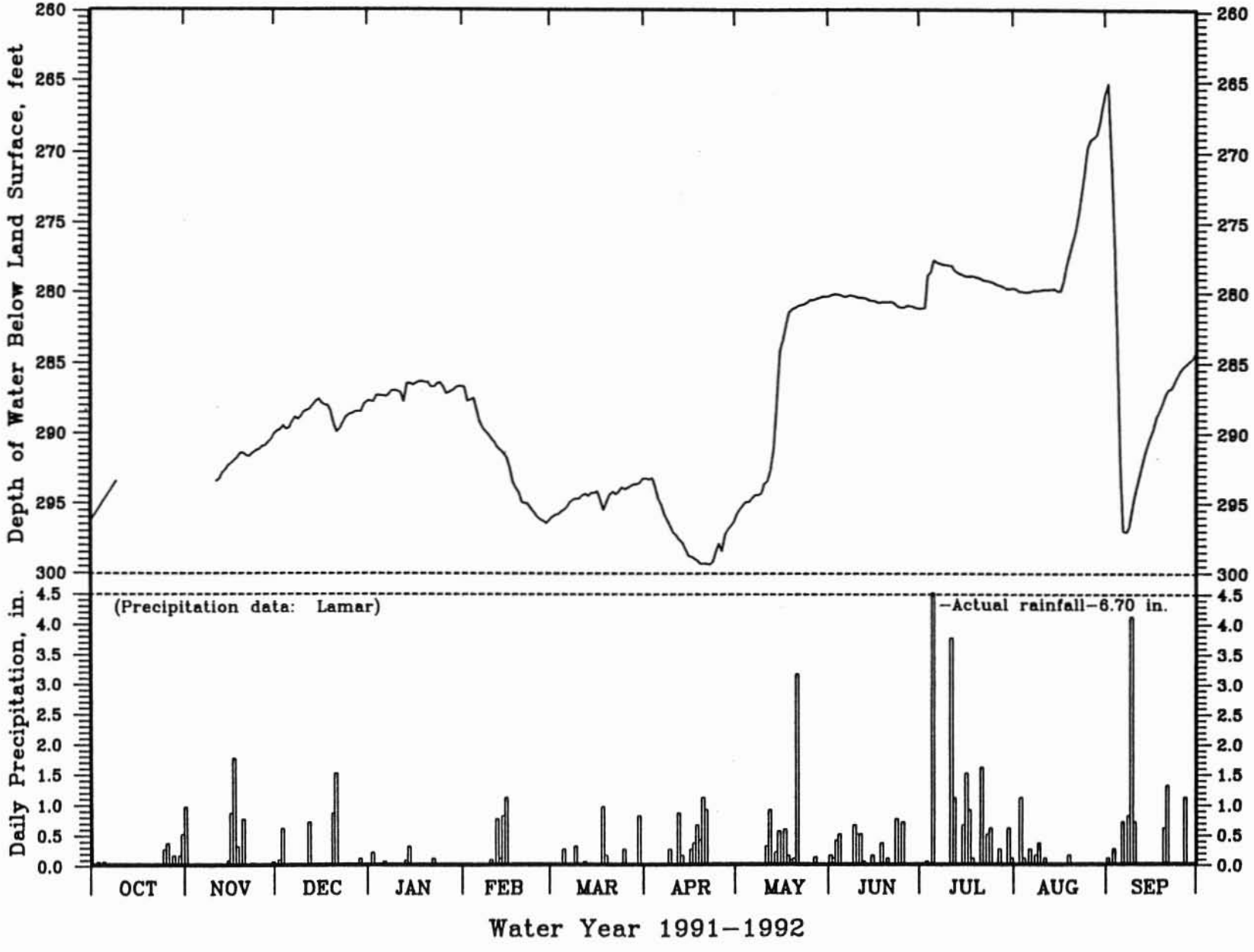



Figure 26. Water-level hydrograph and precipitation, Lamar observation well.

DADE COUNTY: SE1/4 NE1/4 SEC. 12, T. 30 N., R. 29 W. DGLS LOG NUMBER: NA
37 DEG 21 MIN 23 SEC NORTH LATITUDE, 94 DEG 03 MIN 56 SEC WEST LONGITUDE WELL OWNER: A. M. WILSON
LAND SURFACE ELEVATION: 1052 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.0 FEET ABOVE LAND SURFACE (NOTE: **** DENOTES MISSING DATA)
TOTAL DEPTH: 285 FEET WELL DIAMETER: 6 INCHES
CASING: LENGTH UNKNOWN, 6 INCH STEEL CASING, NOT PRESSURE GROUTED
FORMATIONS OPEN TO WELL: BURLINGTON-KEOKUK LIMESTONE, REEDS SPRING FM., AND GRAND FALLS CHERT
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1991, 1 YEAR OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 34.86 | 35.52 | 35.17 | 32.47 | 30.69 | 29.59 | 29.32 | 28.54 | 29.20 | 29.36 | 28.11 | **** |
| 2 | 34.75 | 35.82 | 34.94 | 32.28 | 30.67 | 29.59 | 29.31 | 28.62 | 29.13 | 29.41 | 28.05 | **** |
| 3 | 34.72 | 35.93 | 34.94 | 32.15 | 30.67 | 29.56 | 29.17 | 28.77 | 29.04 | 29.40 | 28.03 | **** |
| 4 | 34.72 | 35.88 | 35.07 | 32.08 | 30.64 | 29.48 | 29.08 | 28.72 | 29.04 | 29.43 | 28.06 | **** |
| 5 | 34.97 | 35.71 | 34.89 | 31.94 | 30.59 | 29.40 | 29.22 | 28.75 | 29.08 | 29.22 | 28.05 | **** |
| 6 | 35.14 | 35.70 | 34.80 | 31.88 | 30.49 | 29.38 | 29.23 | 28.94 | 29.09 | 29.13 | 28.06 | **** |
| 7 | 35.10 | 35.85 | 34.61 | 31.75 | 30.50 | 29.52 | 29.24 | 28.97 | 29.26 | 29.05 | 27.96 | **** |
| 8 | 35.04 | 35.96 | 34.52 | 31.65 | 30.60 | 29.52 | 29.24 | 28.87 | 29.30 | 29.03 | 27.94 | **** |
| 9 | 35.10 | 35.85 | 34.63 | 31.70 | 30.65 | 29.38 | 29.18 | 28.81 | 29.26 | 29.03 | 27.97 | **** |
| 10 | 35.15 | 35.75 | 34.59 | 31.73 | 30.62 | 29.56 | 29.15 | 28.86 | 29.24 | 29.12 | 27.93 | **** |
| 11 | 35.05 | 35.78 | 34.50 | 31.58 | 30.65 | 29.59 | 29.18 | 28.89 | 29.28 | 28.90 | 27.97 | **** |
| 12 | 35.09 | 35.77 | 34.25 | 31.34 | 30.54 | 29.54 | 29.40 | 28.88 | 29.32 | 28.69 | 28.01 | **** |
| 13 | 35.11 | 35.63 | 34.26 | 31.24 | 30.47 | 29.60 | 29.41 | 29.01 | 29.28 | 28.59 | 28.08 | **** |
| 14 | 35.14 | 35.52 | 34.46 | 31.31 | 30.23 | 29.60 | 29.32 | 28.96 | 29.24 | 28.51 | 28.17 | **** |
| 15 | 35.19 | 35.57 | 34.45 | 31.43 | 30.18 | 29.68 | 29.25 | 29.00 | 29.24 | 28.46 | 28.21 | **** |
| 16 | 35.24 | 35.61 | 34.26 | 31.38 | 30.23 | 29.61 | 29.21 | 29.05 | 29.25 | 28.43 | 28.28 | **** |
| 17 | 35.21 | 35.40 | 34.17 | 31.27 | 29.99 | 29.50 | 29.21 | 29.12 | 29.25 | 28.45 | 28.15 | **** |
| 18 | 35.32 | 35.26 | 34.24 | 31.34 | 29.93 | 29.33 | 28.97 | 29.19 | 29.35 | 28.40 | 28.18 | **** |
| 19 | 35.51 | 35.31 | 34.15 | 31.28 | 30.06 | 29.49 | 28.87 | 29.18 | 29.38 | 28.31 | 28.24 | **** |
| 20 | 35.46 | 35.42 | 33.97 | 31.13 | 30.03 | 29.62 | 28.83 | 29.18 | 29.40 | 28.25 | 28.23 | **** |
| 21 | 35.37 | 35.41 | 33.88 | 31.00 | 29.94 | 29.43 | 28.87 | 29.17 | 29.51 | 28.23 | 28.09 | **** |
| 22 | 35.33 | 35.31 | 33.55 | 30.78 | 29.85 | 29.39 | 28.91 | 29.17 | 29.50 | 28.17 | 28.10 | **** |
| 23 | 35.33 | 35.42 | 33.29 | 30.79 | 29.71 | 29.45 | 28.84 | 29.19 | 29.41 | 28.16 | 28.20 | **** |
| 24 | 35.36 | 35.47 | 33.32 | 30.91 | 29.71 | 29.39 | 28.91 | 29.19 | 29.36 | 28.16 | **** | **** |
| 25 | 35.45 | 35.47 | 33.24 | 30.88 | 29.74 | 29.35 | 28.87 | 29.10 | 29.38 | 28.12 | **** | **** |
| 26 | 35.47 | 35.31 | 33.11 | 30.98 | 29.67 | 29.30 | 28.76 | 29.11 | 29.50 | 28.05 | **** | **** |
| 27 | 35.51 | 35.24 | 33.05 | 30.93 | 29.58 | 29.39 | 28.80 | 29.14 | 29.57 | 28.04 | **** | **** |
| 28 | 35.43 | 35.10 | 32.87 | 30.95 | 29.53 | 29.29 | 28.72 | 29.15 | 29.33 | 28.05 | **** | **** |
| 29 | 35.60 | 34.95 | 32.71 | 30.87 | 29.63 | 29.16 | 28.62 | 29.14 | 29.24 | 28.00 | **** | **** |
| 30 | 35.79 | 35.07 | 32.64 | 30.75 | ------ | 29.29 | 28.58 | 29.19 | 29.28 | 27.95 | **** | **** |
| 31 | 35.61 | ------ | 32.60 | 30.72 | ------ | 29.29 | ------ | 29.24 | ------ | 28.05 | **** | ------ |
| MIN | 34.72 | 34.95 | 32.60 | 30.72 | 29.53 | 29.16 | 28.58 | 28.54 | 29.04 | 27.95 | **** | **** |
| MAX | 35.79 | 35.96 | 35.17 | 32.47 | 30.69 | 29.68 | 29.41 | 29.24 | 29.57 | 29.43 | **** | **** |
| MEAN | 35.23 | 35.53 | 34.04 | 31.37 | 30.20 | 29.46 | 29.06 | 29.00 | 29.29 | 28.59 | **** | **** |

1992 EXTREMES: MINIMUM - 27.93 (AUG 10), MAXIMUM - 35.96 (NOV 8), MEAN - ****

Table 27. Groundwater level data, WY 1991-1992, Golden City observation well.

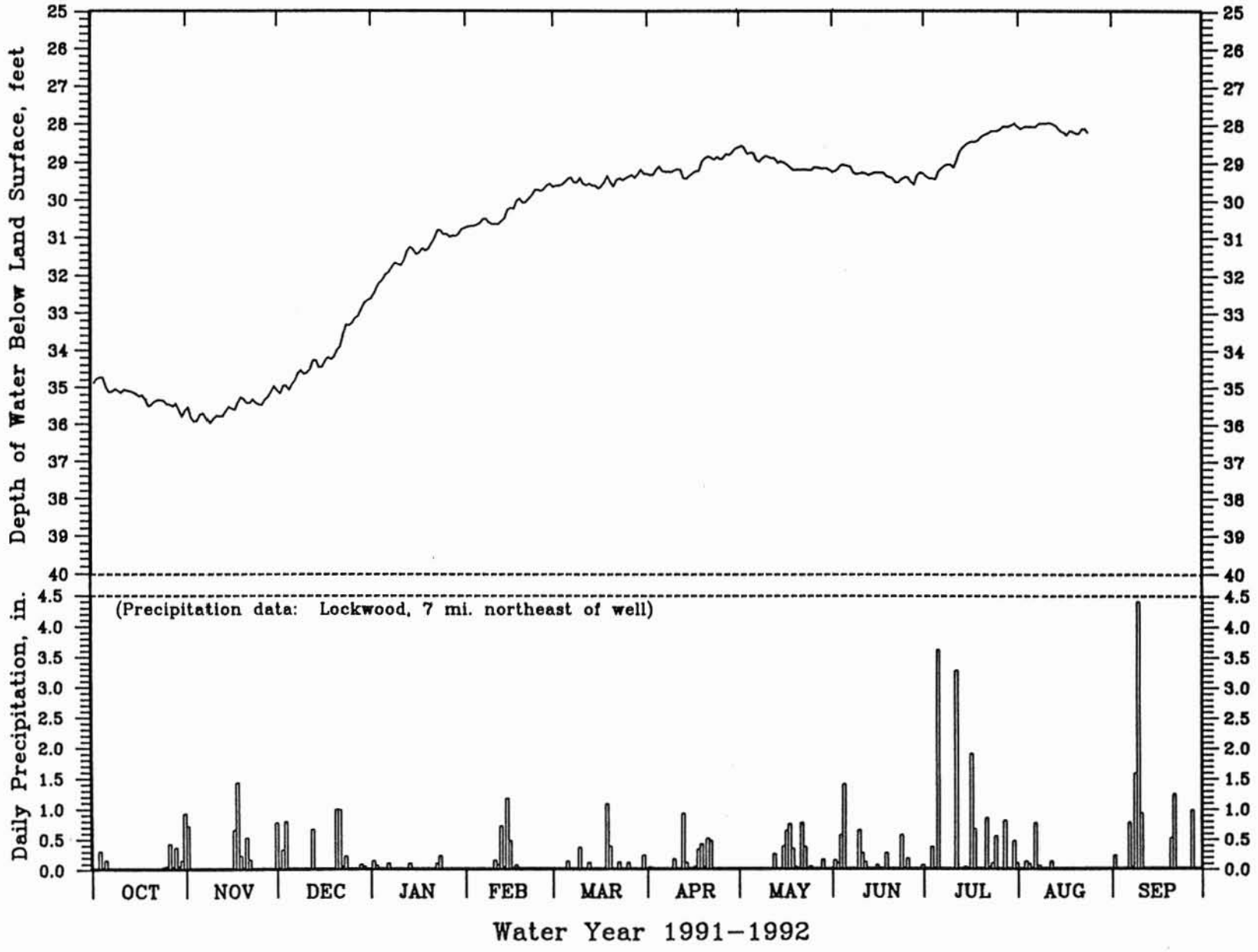



Figure 27. Water-level hydrograph and precipitation, Golden City observation well.

JASPER COUNTY: SW1/4 SE1/4 SEC. 36, T. 28 N., R. 32 W. DGLS LOG NUMBER: 6507
37 DEG 06 MIN 00 SEC NORTH LATITUDE, 94 DEG 22 MIN 35 SEC WEST LONGITUDE WELL OWNER: ATLAS CHEMICAL INDUSTRIES
LAND SURFACE ELEVATION: 970 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 3.5 FEET ABOVE LAND SURFACE (NOTE: **** DENOTES MISSING DATA)
TOTAL DEPTH: 1747 FEET WELL DIAMETER: 10 INCHES
CASING: 375 FEET OF 10 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: COTTER DOL., JEFFERSON CITY DOL., ROUBIDOUX FM., GASCONADE DOL., EMINENCE DOL., POTOSI DOL., BONNETERRE FM., LAMOTTE SS., UNDIF. PRECAMBRIAN
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25.39 | **** | **** | **** | 17.02 | 16.30 | 16.58 | 15.70 | 15.02 | 14.00 | 13.35 | 14.57 |
| 2 | 25.40 | **** | **** | **** | 17.05 | 16.35 | 16.55 | 15.80 | 14.95 | 13.65 | 13.40 | 14.60 |
| 3 | 25.52 | **** | **** | **** | 17.05 | 16.37 | 16.55 | 15.90 | 14.58 | 13.68 | 13.45 | 14.62 |
| 4 | 25.72 | **** | **** | **** | 17.06 | 16.40 | 16.60 | 15.87 | 14.28 | 13.80 | 13.55 | 14.62 |
| 5 | 25.94 | **** | **** | **** | 17.05 | 16.40 | 16.62 | 15.88 | 14.00 | 13.87 | 13.58 | 14.60 |
| 6 | 26.08 | **** | **** | **** | 17.03 | 16.40 | 16.70 | 16.00 | 13.65 | 13.97 | 13.60 | 14.60 |
| 7 | 25.99 | **** | **** | **** | 17.05 | 16.40 | 16.75 | 16.05 | 13.60 | 14.05 | 13.72 | 14.65 |
| 8 | 26.01 | **** | **** | **** | 17.07 | 16.42 | 16.73 | 16.05 | 13.65 | 14.10 | 13.80 | 14.70 |
| 9 | 26.18 | **** | **** | **** | 17.10 | 16.45 | 16.70 | 16.10 | 13.70 | 14.15 | 13.85 | 14.65 |
| 10 | **** | **** | **** | **** | 17.08 | 16.50 | 16.70 | 16.25 | 13.75 | 14.20 | 13.90 | 14.60 |
| 11 | **** | **** | **** | **** | 17.05 | 16.45 | 16.70 | 16.35 | 13.85 | 14.25 | 14.00 | 14.15 |
| 12 | **** | **** | **** | **** | 16.95 | 16.45 | 16.70 | 15.75 | 13.90 | 14.30 | 14.05 | 13.60 |
| 13 | **** | **** | **** | **** | 16.82 | 16.57 | 16.62 | 15.18 | 13.55 | 14.30 | 14.10 | 13.00 |
| 14 | **** | **** | **** | **** | 16.30 | 16.60 | 16.35 | 15.05 | 13.43 | 14.38 | 14.15 | 12.55 |
| 15 | **** | **** | **** | **** | 15.85 | 16.62 | 16.10 | 15.12 | 13.48 | 14.37 | 14.15 | 12.60 |
| 16 | **** | **** | **** | **** | 15.70 | 16.57 | 15.83 | 15.12 | 13.62 | 14.00 | 14.20 | 12.72 |
| 17 | **** | **** | **** | **** | 15.60 | 16.58 | 15.30 | 14.90 | 13.75 | 13.70 | 14.20 | 12.50 |
| 18 | **** | **** | **** | **** | 15.62 | 16.53 | 14.62 | 14.35 | 13.82 | 13.58 | 14.25 | 12.60 |
| 19 | **** | **** | **** | **** | 15.75 | 16.62 | 14.65 | 14.05 | 13.87 | 12.78 | 14.30 | 12.70 |
| 20 | **** | **** | **** | **** | 15.85 | 16.52 | 14.75 | 14.10 | 13.95 | 11.90 | 14.33 | 12.75 |
| 21 | **** | **** | **** | **** | 15.90 | 16.45 | 14.90 | 14.23 | 14.03 | 12.05 | 14.40 | 12.70 |
| 22 | **** | **** | **** | **** | 15.92 | 16.40 | 15.10 | 14.35 | 14.10 | 12.20 | 14.40 | 12.65 |
| 23 | **** | **** | **** | **** | 15.97 | 16.47 | 15.20 | 14.38 | 14.13 | 12.40 | 14.40 | 12.75 |
| 24 | **** | **** | **** | **** | 16.02 | 16.50 | 15.30 | 14.55 | 14.15 | 12.60 | 14.45 | 12.75 |
| 25 | **** | **** | **** | **** | 16.10 | 16.52 | 15.40 | 14.75 | 14.22 | 12.75 | 14.50 | 12.75 |
| 26 | **** | **** | **** | **** | 16.12 | 16.50 | 15.45 | 14.80 | 14.30 | 12.90 | 14.50 | 12.80 |
| 27 | **** | **** | **** | **** | 16.17 | 16.50 | 15.50 | 14.95 | 14.30 | 13.05 | 14.50 | 12.85 |
| 28 | **** | **** | **** | **** | 16.20 | 16.55 | 15.55 | 15.07 | 14.35 | 13.10 | 14.50 | 12.90 |
| 29 | **** | **** | **** | **** | 16.25 | 16.57 | 15.60 | 15.05 | 14.45 | 13.15 | 14.53 | 12.95 |
| 30 | **** | **** | **** | 17.00 | ------ | 16.57 | 15.65 | 15.00 | 14.43 | 13.23 | 14.55 | 13.00 |
| 31 | **** | ------ | **** | 17.02 | ------ | 16.57 | ------ | 15.00 | ------ | 13.25 | 14.55 | ------ |
| MIN | **** | **** | **** | **** | 15.60 | 16.30 | 14.62 | 14.05 | 13.43 | 11.90 | 13.35 | 12.50 |
| MAX | **** | **** | **** | **** | 17.10 | 16.62 | 16.75 | 16.35 | 15.02 | 14.38 | 14.55 | 14.70 |
| MEAN | **** | **** | **** | **** | 16.44 | 16.49 | 15.92 | 15.22 | 14.03 | 13.47 | 14.10 | 13.45 |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 28. Groundwater level data, WY 1991-1992, Atlas Powder observation well.

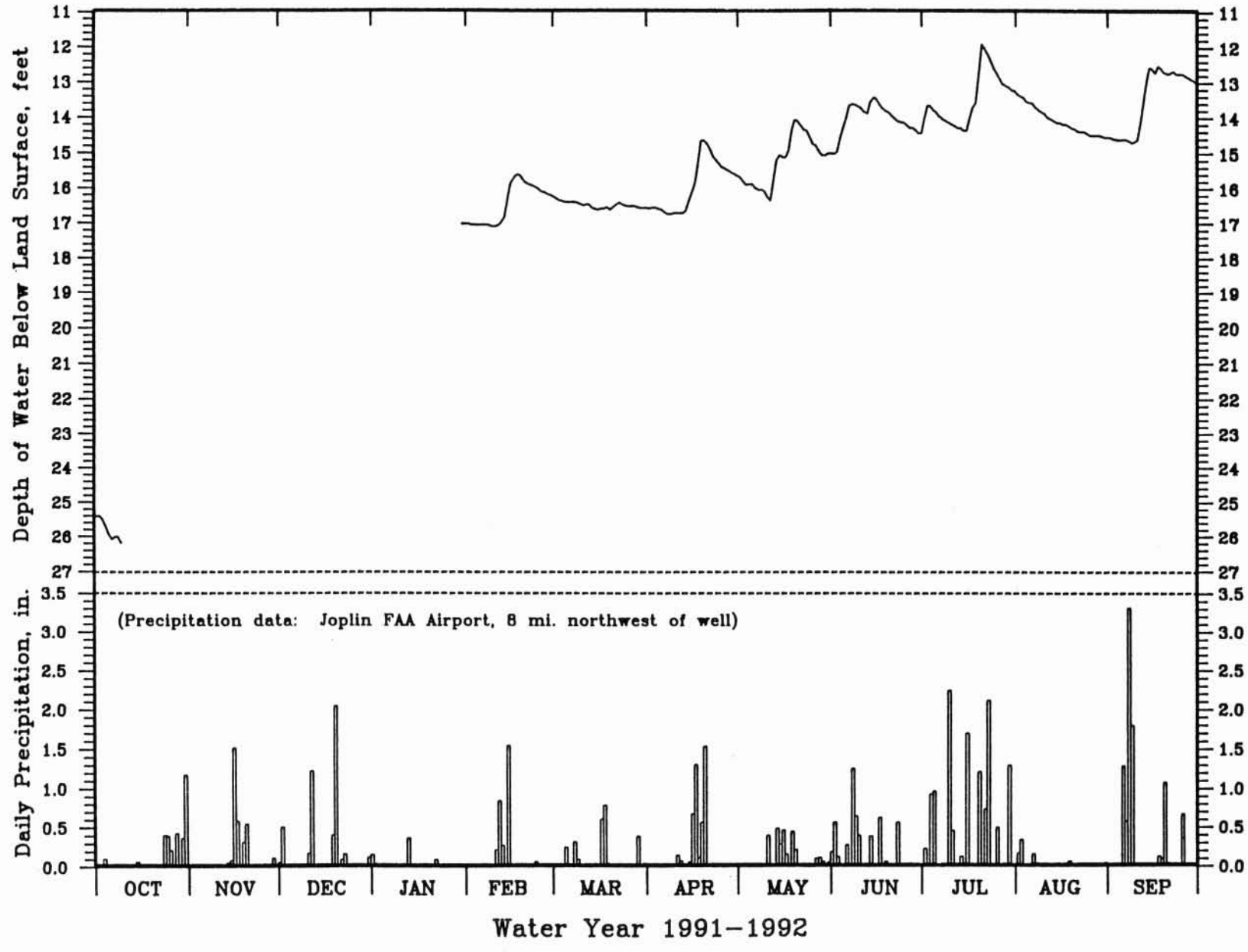



Figure 28. Water-level hydrograph and precipitation, Atlas Powder observation well.

LAWRENCE COUNTY: NE1/4 SE1/4 SEC. 24, T. 26 N., R. 26 W. DGLS LOG NUMBER: NONE
36 DEG 56 MIN 45 SEC NORTH LATITUDE, 93 DEG 43 MIN 16 SEC WEST LONGITUDE WELL OWNER: EMPIRE DISTRICT ELECTRIC
LAND SURFACE ELEVATION: 1460 FEET ABOVE MEAN SEA LEVEL. (WELL #5)
MEASURING POINT IS RECORDER SHELF, 3.5 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 1425 FEET WELL DIAMETER: UNKNOWN (NOTE: **** DENOTES MISSING DATA)
CASING: 195 FEET OF 16 INCH CASING, 572 FEET OF 12 INCH CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: JEFFERSON CITY DOL., ROUBIDOUX FM., GASCONADE DOL., AND EMINENCE DOL.
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1988, 4 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 103.98 | 105.90 | 106.32 | 105.60 | **** | 106.40 | 105.85 | 105.43 | 105.20 | 107.28 | 107.59 | 106.71 |
| 2 | 104.00 | 106.08 | 106.20 | 105.65 | **** | 106.42 | 105.95 | 105.37 | 105.32 | 107.20 | 107.57 | 106.62 |
| 3 | 104.11 | 106.05 | 106.28 | 105.70 | **** | 106.50 | 106.03 | 105.28 | 105.28 | 107.25 | 107.55 | 106.58 |
| 4 | 104.23 | 106.10 | 106.27 | 105.80 | **** | 106.55 | 105.95 | 105.30 | 105.25 | 107.35 | 107.53 | 106.55 |
| 5 | 104.52 | 106.10 | 106.18 | 105.85 | **** | 106.55 | 105.90 | 105.23 | 105.25 | 107.40 | 107.50 | 106.50 |
| 6 | 104.62 | 106.15 | 106.12 | 105.90 | **** | 106.45 | 105.90 | 105.13 | 105.18 | 107.43 | 107.52 | 106.48 |
| 7 | 104.61 | **** | 106.05 | 106.00 | **** | 106.40 | 105.87 | 105.15 | 105.17 | 107.47 | 107.47 | 106.42 |
| 8 | 104.60 | **** | 106.05 | 105.95 | **** | 106.47 | 105.85 | 105.20 | 105.17 | 107.50 | 107.45 | 106.45 |
| 9 | 104.80 | **** | 106.05 | 105.95 | **** | 106.45 | 105.85 | 105.14 | 105.27 | 107.52 | 107.44 | 103.27 |
| 10 | 104.82 | **** | 106.00 | 105.95 | **** | 106.35 | 105.83 | 105.08 | 105.32 | 107.60 | 107.40 | 103.30 |
| 11 | 104.82 | **** | 105.95 | 106.08 | **** | 106.43 | 105.78 | 105.08 | 105.42 | 107.65 | 107.42 | 103.35 |
| 12 | 104.90 | **** | 105.85 | 106.13 | **** | 106.33 | 105.65 | 105.00 | 105.58 | 107.67 | 107.35 | 103.34 |
| 13 | 105.03 | **** | 105.92 | 106.12 | 105.80 | 106.38 | 105.65 | 105.00 | 105.65 | 107.70 | 107.30 | 103.30 |
| 14 | 105.00 | 106.52 | 106.00 | 106.05 | 105.93 | 106.35 | 105.68 | 105.00 | 105.80 | 107.73 | 107.28 | 103.30 |
| 15 | 105.05 | 106.62 | 105.95 | 105.95 | 105.85 | 106.30 | 105.70 | 105.08 | 105.93 | 107.73 | 107.28 | 103.30 |
| 16 | 105.10 | 106.65 | 105.85 | 106.08 | 106.00 | 106.35 | 105.65 | 105.11 | 106.02 | 107.68 | 107.23 | 103.30 |
| 17 | 105.15 | 106.57 | 105.90 | 106.05 | 106.10 | 106.40 | 105.65 | 105.18 | 106.15 | 107.70 | 107.20 | 103.25 |
| 18 | 105.28 | 106.55 | 105.92 | 106.00 | 106.07 | 106.25 | 105.70 | 105.21 | 106.30 | 107.72 | 107.18 | 103.34 |
| 19 | 105.38 | 106.58 | 105.90 | 106.05 | 106.08 | 106.23 | 105.65 | 105.18 | 106.40 | 107.73 | 107.15 | 103.34 |
| 20 | 105.38 | 106.60 | 105.80 | 106.07 | 106.15 | 106.22 | 105.65 | 105.13 | 106.47 | 107.72 | 107.12 | 103.24 |
| 21 | 105.40 | 106.58 | 105.68 | 106.12 | 106.20 | 106.35 | 105.55 | 105.14 | 106.60 | 107.71 | 107.10 | 103.20 |
| 22 | 105.45 | 106.52 | 105.48 | **** | 106.28 | 106.31 | 105.52 | 105.15 | 106.73 | 107.71 | 107.07 | 103.25 |
| 23 | 105.50 | 106.55 | 105.45 | **** | 106.32 | 106.27 | 105.53 | 105.14 | 106.82 | 107.69 | 107.00 | 103.30 |
| 24 | 105.60 | 106.55 | 105.35 | **** | 106.33 | 106.25 | 105.48 | 105.12 | 106.87 | 107.70 | 106.95 | 103.30 |
| 25 | 105.68 | 106.45 | 105.25 | **** | 106.37 | 106.25 | 105.45 | 105.10 | 106.88 | 107.69 | 106.92 | 103.25 |
| 26 | 105.70 | 106.47 | 105.15 | **** | 106.42 | 106.20 | 105.42 | 105.13 | 106.92 | 107.67 | 106.90 | 103.20 |
| 27 | 105.75 | 106.35 | 105.13 | **** | 106.44 | 106.03 | 105.42 | 105.15 | 107.08 | 107.65 | 106.90 | 103.17 |
| 28 | 105.75 | 106.30 | 105.25 | **** | 106.42 | 106.07 | 105.45 | 105.15 | 107.15 | 107.70 | 106.82 | 103.20 |
| 29 | 105.85 | 106.23 | 105.32 | **** | 106.40 | 106.08 | 105.45 | 105.15 | 107.21 | 107.65 | 106.78 | 103.23 |
| 30 | 105.95 | 106.32 | 105.35 | **** | ------ | 106.00 | 105.42 | 105.20 | 107.25 | 107.58 | 106.75 | 103.25 |
| 31 | 105.88 | ------ | 105.45 | **** | ------ | 106.00 | ------ | 105.20 | ------ | 107.57 | 106.72 | ------ |
| MIN | 103.98 | 105.90 | 105.13 | 105.60 | 105.80 | 106.00 | 105.42 | 105.00 | 105.17 | 107.20 | 106.72 | 103.17 |
| MAX | 105.95 | 106.65 | 106.32 | 106.13 | 106.44 | 106.55 | 106.03 | 105.43 | 107.25 | 107.73 | 107.59 | 106.71 |
| MEAN | 105.09 | **** | 105.79 | **** | **** | 106.31 | 105.68 | 105.16 | 106.05 | 107.59 | 107.21 | 104.14 |

1992 EXTREMES: MINIMUM - 103.17 (SEP 27), MAXIMUM - 107.73 (JUL 14), MEAN - ****

Table 29. Groundwater level data, WY 1991-1992, Aurora observation well.

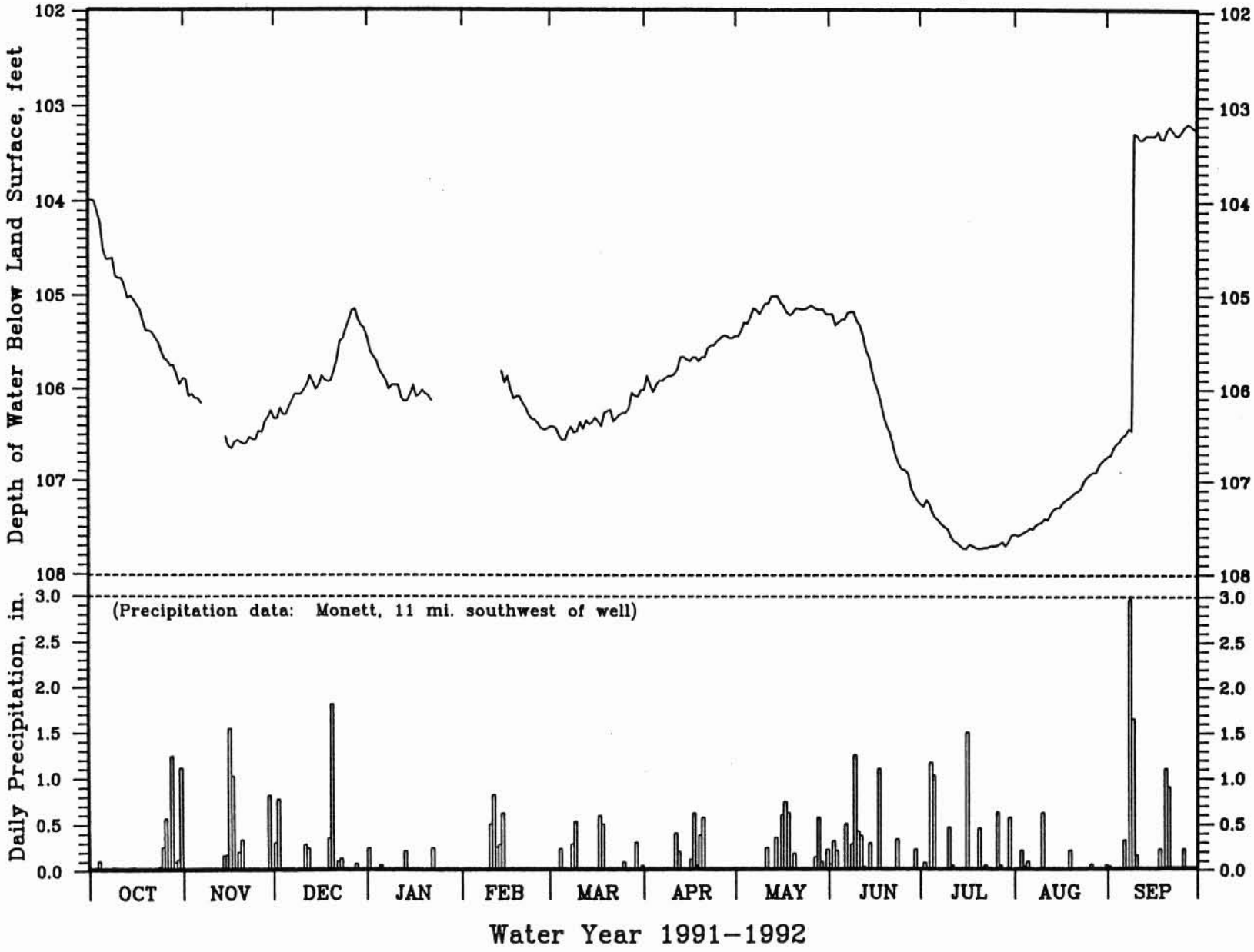



Figure 29. Water-level hydrograph and precipitation, Aurora observation well.

MCDONALD COUNTY: NE1/4 NE1/4 SEC. 18, T. 23 N., R. 30 W. DGLS LOG NUMBER: 14147
36 DEG 43 MIN 13 SEC NORTH LATITUDE, 94 DEG 12 MIN 11 SEC WEST LONGITUDE WELL OWNER: MO. HWY. DEPT.
LAND SURFACE ELEVATION: 1290 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 2.2 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 346 FEET WELL DIAMETER: 8 INCHES
CASING: 44 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED
FORMATIONS OPEN TO WELL: BURLINGTON-KEOKUK LS., REED SPRINGS FM., NORTHVIEW FM., AND COMPTON FM.
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 170.45 | 170.00 | 169.72 | 170.35 | 169.61 | 169.90 | 169.15 | 169.35 | 172.40 | 171.85 | 172.70 | 172.80 |
| 2 | 170.33 | 169.60 | 170.05 | 170.33 | 169.58 | 169.75 | 169.20 | 169.05 | 172.18 | 171.87 | 172.60 | 172.80 |
| 3 | 170.30 | 169.45 | 169.75 | 170.20 | 169.60 | 169.75 | 169.55 | 169.10 | 171.95 | 172.15 | 172.58 | 173.05 |
| 4 | 170.41 | 169.60 | 169.57 | 170.05 | 169.70 | 169.85 | 169.50 | 169.10 | 171.98 | 172.25 | 172.52 | 173.20 |
| 5 | 170.82 | 169.85 | 169.69 | 170.08 | 169.82 | 169.90 | 169.35 | 169.15 | 172.03 | 172.10 | 172.42 | 173.35 |
| 6 | 171.30 | 169.88 | 169.75 | 170.20 | 169.72 | 169.75 | 169.40 | 169.30 | 171.95 | 172.12 | 172.40 | 173.60 |
| 7 | 170.77 | 169.60 | 169.95 | 170.15 | 169.75 | 169.55 | 169.40 | 169.20 | 172.15 | 172.17 | 172.24 | 173.65 |
| 8 | 170.25 | 169.43 | 169.85 | 169.90 | 169.58 | 169.60 | 169.55 | 169.05 | 172.15 | 172.30 | 172.25 | 173.95 |
| 9 | 169.85 | 169.60 | 169.57 | 169.80 | 169.55 | 169.72 | 169.58 | 169.00 | 172.05 | 172.34 | 172.27 | 173.95 |
| 10 | 169.83 | 169.68 | 169.62 | 169.95 | 169.61 | 169.35 | 169.70 | 169.05 | 171.93 | 172.33 | 172.20 | 174.00 |
| 11 | 170.00 | 169.55 | 170.00 | 170.20 | 169.67 | 169.40 | 169.55 | 169.15 | 171.92 | 172.35 | 172.20 | 174.40 |
| 12 | 169.95 | 169.50 | 169.85 | 170.20 | 169.85 | 169.30 | 169.25 | 169.10 | 171.90 | 172.28 | 172.45 | 174.45 |
| 13 | 169.95 | 169.65 | 169.45 | 169.90 | 170.05 | 169.28 | 169.35 | 170.85 | 171.82 | 172.32 | 172.42 | 174.55 |
| 14 | 169.90 | 169.90 | 169.45 | 169.55 | 170.35 | 169.20 | 169.50 | 171.70 | 171.75 | 172.33 | 172.40 | 174.75 |
| 15 | 169.85 | 169.75 | 169.65 | 169.60 | 170.22 | 169.10 | 169.55 | 171.77 | 171.72 | 172.40 | 172.40 | 175.00 |
| 16 | 169.80 | 169.82 | 169.70 | 169.48 | 170.15 | 169.25 | 169.55 | 171.90 | 171.77 | 172.45 | 172.38 | 175.10 |
| 17 | 169.90 | 170.15 | 169.52 | 169.30 | 170.35 | 169.50 | 169.65 | 171.95 | 171.75 | 172.65 | 172.28 | 173.75 |
| 18 | 169.80 | 170.45 | 169.60 | 169.35 | 170.15 | 169.60 | 169.72 | 172.05 | 171.90 | 172.75 | 172.27 | 173.25 |
| 19 | 169.65 | 170.22 | 169.82 | 169.45 | 169.82 | 169.10 | 169.82 | 172.05 | 171.92 | 172.75 | 172.24 | 173.18 |
| 20 | 169.85 | 170.00 | 170.10 | 169.65 | 169.92 | 169.07 | 169.75 | 172.05 | 171.90 | 172.78 | 172.18 | 173.50 |
| 21 | 170.05 | 169.95 | 170.65 | 169.95 | 170.00 | 169.30 | 169.50 | 172.12 | 172.08 | 172.87 | 172.22 | 174.60 |
| 22 | 170.14 | 169.95 | 170.62 | 169.80 | 170.15 | 169.15 | 169.35 | 172.20 | 172.05 | 172.83 | 172.20 | 175.20 |
| 23 | 170.15 | 169.77 | 170.35 | 169.65 | 170.20 | 169.10 | 169.25 | 172.20 | 171.90 | 172.87 | 172.17 | 175.65 |
| 24 | 170.15 | 169.67 | 170.32 | 169.60 | 170.05 | 169.25 | 169.12 | 172.20 | 171.90 | 172.90 | 172.22 | **** |
| 25 | 170.10 | 169.70 | 170.30 | 169.50 | 170.05 | 169.30 | 169.10 | 172.10 | 171.82 | 172.83 | 172.25 | **** |
| 26 | 170.05 | 169.85 | 170.22 | 169.50 | 170.10 | 169.30 | 169.00 | 173.15 | 172.00 | 172.70 | 172.25 | **** |
| 27 | 170.05 | 169.90 | 170.35 | 169.45 | 170.15 | 169.20 | 169.05 | 172.27 | 172.10 | 172.65 | 172.27 | **** |
| 28 | 170.17 | 170.05 | 170.40 | 169.50 | 170.15 | 169.40 | 169.25 | 172.15 | 171.95 | 172.70 | 172.32 | **** |
| 29 | 169.85 | 170.20 | 170.30 | 169.70 | 169.95 | 169.45 | 169.30 | 172.27 | 171.88 | 172.63 | 172.37 | **** |
| 30 | 169.70 | 169.80 | 170.15 | 169.65 | ------ | 169.20 | 169.30 | 172.73 | 171.85 | 172.52 | 172.45 | **** |
| 31 | 170.00 | ------ | 170.20 | 169.62 | ------ | 169.25 | ------ | 172.75 | ------ | 172.65 | 172.65 | ------ |
| MIN | 169.65 | 169.43 | 169.45 | 169.30 | 169.55 | 169.07 | 169.00 | 169.00 | 171.72 | 171.85 | 172.17 | 172.80 |
| MAX | 171.30 | 170.45 | 170.65 | 170.35 | 170.35 | 169.90 | 169.82 | 173.15 | 172.40 | 172.90 | 172.70 | 175.65 |
| MEAN | 170.11 | 169.82 | 169.95 | 169.79 | 169.93 | 169.41 | 169.41 | 170.97 | 171.96 | 172.47 | 172.35 | **** |

1992 EXTREMES: MINIMUM - 169.00 (APR 26), MAXIMUM - 175.65 (SEP 23), MEAN - ****

Table 30. Groundwater level data, WY 1991-1992, Longview observation well.

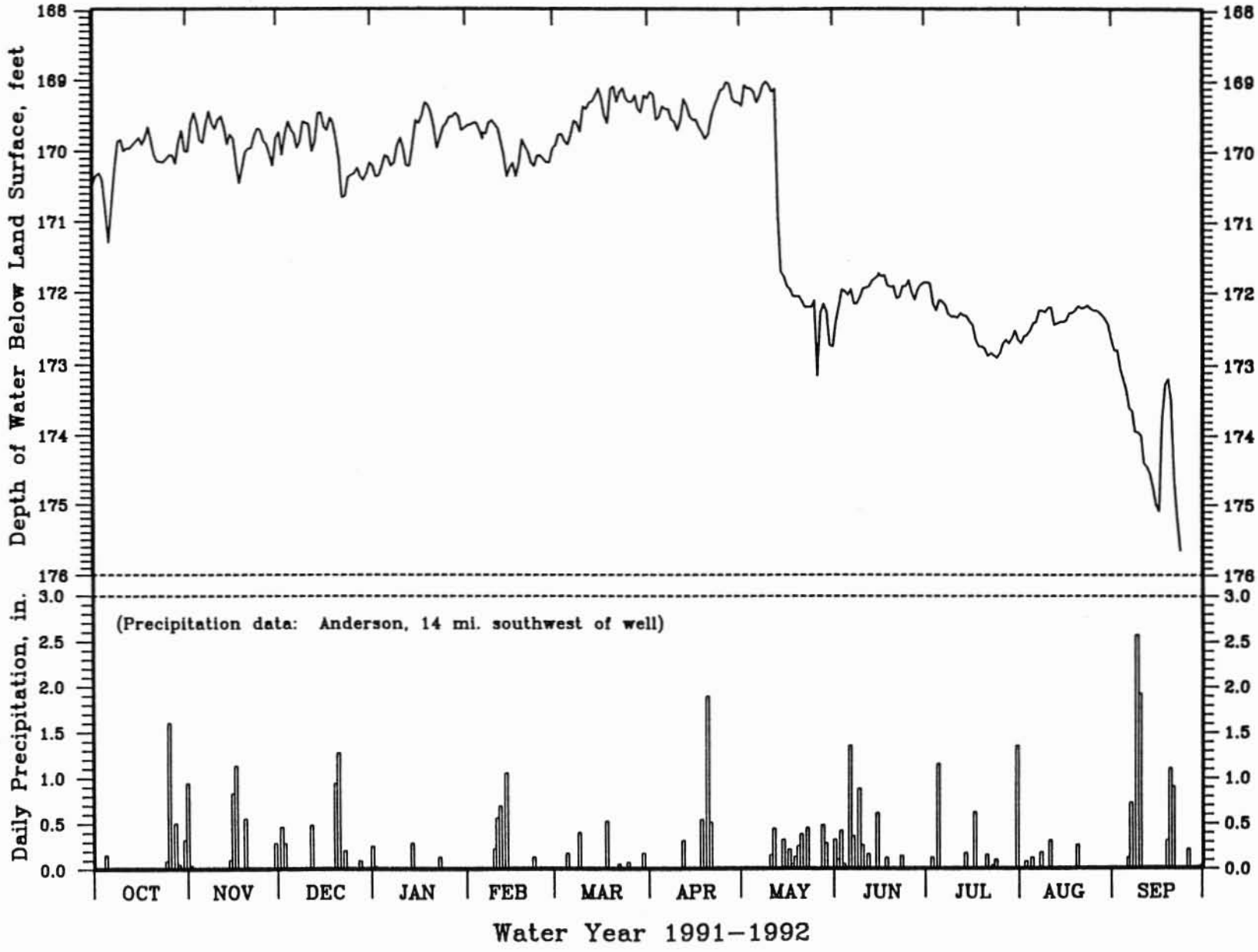



Figure 30. Water-level hydrograph and precipitation, Longview observation well.

MCDONALD COUNTY: NE1/4 NE1/4 SEC. 22, T. 21 N., R. 33 W. DGLS LOG NUMBER: 3451
36 DEG 32 MIN 37 SEC NORTH LATITUDE, 94 DEG 29 MIN 05 SEC WEST LONGITUDE WELL OWNER: NOEL WATER CO., WELL #2
LAND SURFACE ELEVATION: 830 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER PLATFORM, 1.7 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 850 FEET WELL DIAMETER: 6 INCHES
CASING: 99 FEET OF 6 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: COTTER DOL, JEFFERSON CITY DOL., ROUBIDOUX FM., AND GASCONADE DOL.
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1962, 30 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 230.16 | 234.28 | 231.22 | 232.33 | 241.94 | 234.89 | 234.89 | 234.89 | 232.06 | 249.34 | 255.18 | 251.13 |
| 2 | 230.20 | 236.17 | 229.32 | 229.59 | 236.07 | 234.89 | 234.89 | 234.89 | 235.54 | 251.36 | 248.72 | 253.66 |
| 3 | 230.20 | 231.25 | 233.58 | 232.54 | 232.39 | 234.89 | 234.89 | 234.89 | 238.12 | 252.37 | 245.30 | 256.19 |
| 4 | 230.20 | 229.56 | 236.70 | 232.82 | 233.21 | 234.89 | 234.89 | 234.89 | 240.38 | 246.31 | 249.07 | 258.08 |
| 5 | 230.20 | 233.77 | 238.79 | 226.76 | 233.21 | 234.89 | 234.89 | 234.89 | 242.49 | 239.96 | 252.25 | 258.39 |
| 6 | 230.66 | 236.70 | 240.14 | 225.21 | 234.44 | 234.89 | 234.89 | 234.89 | 242.62 | 237.60 | 254.18 | 251.80 |
| 7 | 229.32 | 238.57 | 241.46 | 229.35 | 238.84 | 234.89 | 234.89 | 234.89 | 236.58 | 242.96 | 255.92 | 246.28 |
| 8 | 232.34 | 240.52 | 237.99 | 232.21 | 238.27 | 234.89 | 234.89 | 234.89 | 233.35 | 246.52 | 256.08 | 245.14 |
| 9 | 235.70 | 240.17 | 234.76 | 234.02 | 231.70 | 234.89 | 234.89 | 234.89 | 236.70 | 249.13 | 249.55 | 249.26 |
| 10 | 233.20 | 233.68 | 237.72 | 235.42 | 229.32 | 234.89 | 234.89 | 234.89 | 238.88 | 251.12 | 246.65 | 252.77 |
| 11 | 235.81 | 231.24 | 240.08 | 236.54 | 233.01 | 234.89 | 234.89 | 234.89 | 241.14 | 250.91 | 249.50 | 254.75 |
| 12 | 236.41 | 234.87 | 241.81 | 234.15 | 235.29 | 234.89 | 234.89 | 234.89 | 243.41 | 244.54 | 252.80 | 256.34 |
| 13 | 230.54 | 237.60 | 243.22 | 230.37 | 237.34 | 234.89 | 234.89 | 238.50 | 243.68 | 240.83 | 254.89 | 255.39 |
| 14 | 228.92 | 239.41 | 243.38 | 233.62 | 239.24 | 234.89 | 234.89 | 244.78 | 236.76 | 245.06 | 256.08 | 251.08 |
| 15 | 232.02 | 241.25 | 237.87 | 235.91 | 239.44 | 234.89 | 234.89 | 246.98 | 233.28 | 247.88 | 256.92 | 253.95 |
| 16 | 232.61 | 240.91 | 235.08 | 237.83 | 233.92 | 234.89 | 234.89 | 246.75 | 237.73 | 250.46 | 253.91 | 256.07 |
| 17 | 232.61 | 234.97 | 238.69 | 239.29 | 230.64 | 234.89 | 234.89 | 239.40 | 240.89 | 251.08 | 249.07 | 257.87 |
| 18 | 232.61 | 233.00 | 241.16 | 240.67 | 234.41 | 234.89 | 234.89 | 236.10 | 243.48 | 250.28 | 251.95 | 257.92 |
| 19 | 232.61 | 236.46 | 242.70 | 238.44 | 236.65 | 234.89 | 234.89 | 240.02 | 245.30 | 245.19 | 254.05 | 256.84 |
| 20 | 232.41 | 238.77 | 243.94 | 234.60 | 238.49 | 234.89 | 234.89 | 243.12 | 245.15 | 241.88 | 255.45 | 249.40 |
| 21 | 231.27 | 240.60 | 243.36 | 236.14 | 240.03 | 234.89 | 234.89 | 245.32 | 239.24 | 246.06 | 256.99 | 247.93 |
| 22 | 235.73 | 242.07 | 236.59 | 237.11 | 238.83 | 234.89 | 234.89 | 247.75 | 235.55 | 248.49 | 257.26 | 252.93 |
| 23 | 238.65 | 241.87 | 234.45 | 238.68 | 234.89 | 234.89 | 234.89 | 246.25 | 238.97 | 250.16 | 251.30 | 255.53 |
| 24 | 240.38 | 235.48 | 236.60 | 239.74 | 234.89 | 234.89 | 234.89 | 236.96 | 242.35 | 250.11 | 248.33 | 256.97 |
| 25 | 241.76 | 233.07 | 231.54 | 237.93 | 234.89 | 234.89 | 234.89 | 232.98 | 245.29 | 252.34 | 252.29 | 258.27 |
| 26 | 240.94 | 236.33 | 228.90 | 231.55 | 234.89 | 234.89 | 234.89 | 231.89 | 247.25 | 246.50 | 255.16 | 256.94 |
| 27 | 234.06 | 238.80 | 229.60 | 229.73 | 234.89 | 234.89 | 234.89 | 236.18 | 249.69 | 243.25 | 257.02 | 250.67 |
| 28 | 231.22 | 238.44 | 234.24 | 233.48 | 234.89 | 234.89 | 234.89 | 238.95 | 249.91 | 248.20 | 258.51 | 248.86 |
| 29 | 232.88 | 234.78 | 229.97 | 238.37 | 234.89 | 234.89 | 234.89 | 241.11 | 245.35 | 251.39 | 257.90 | 252.92 |
| 30 | 234.41 | 236.17 | 227.69 | 241.62 | ------ | 234.89 | 234.89 | 241.33 | 247.47 | 253.72 | 250.62 | 255.83 |
| 31 | 231.16 | ------ | 231.79 | 242.53 | ------ | 234.89 | ------ | 235.48 | ------ | 255.30 | 247.86 | ------ |
| MIN | 228.92 | 229.56 | 227.69 | 225.21 | 229.32 | 234.89 | 234.89 | 231.89 | 232.06 | 237.60 | 245.30 | 245.14 |
| MAX | 241.76 | 242.07 | 243.94 | 242.53 | 241.94 | 234.89 | 234.89 | 247.75 | 249.91 | 255.30 | 258.51 | 258.39 |
| MEAN | 233.26 | 236.69 | 236.59 | 234.79 | 235.55 | 234.89 | 234.89 | 238.34 | 240.95 | 247.75 | 252.93 | 253.64 |

1992 EXTREMES: MINIMUM - 225.21 (JAN 6), MAXIMUM - 258.51 (AUG 28), MEAN - 240.03

Table 31. Groundwater level data, WY 1991-1992, Noel observation well.

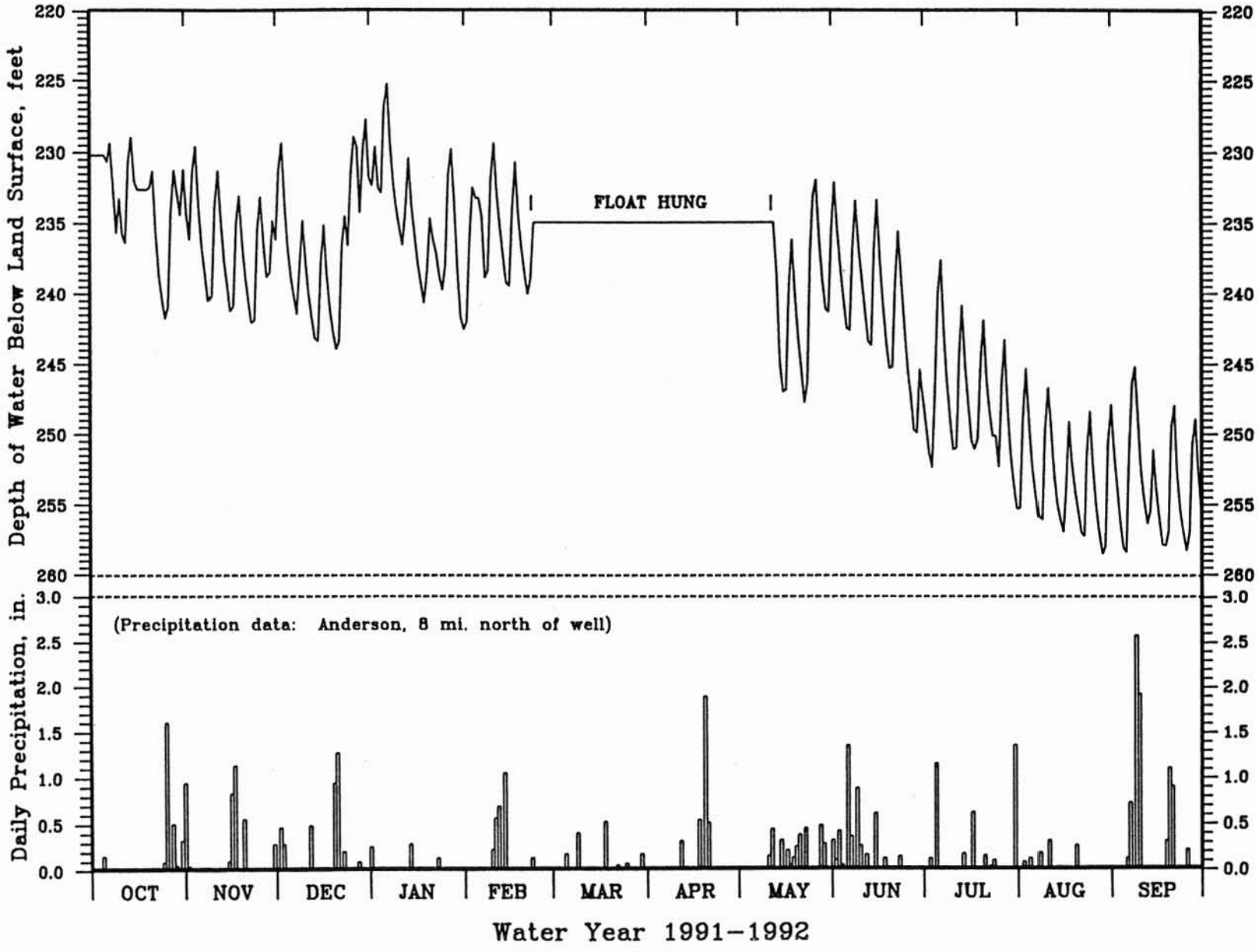



Figure 31. Water-level hydrograph and precipitation, Noel observation well.

TEXAS COUNTY: SE1/4 SE1/4 SEC. 17, T. 30 N., R. 11 W. DGLS LOG NUMBER: 14295
37 DEG 18 MIN 00 SEC NORTH LATITUDE, 92 DEG 09 MIN 48 SEC WEST LONGITUDE WELL OWNER: MO. HWY. DEPT.
LAND SURFACE ELEVATION: 1465 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 2.1 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 481 FEET WELL DIAMETER: 8 INCHES (NOTE: **** DENOTES MISSING DATA)
CASING: 50 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED
FORMATIONS OPEN TO WELL: COTTER DOL., JEFFERSON CITY DOL., ROUBIDOUX FM., AND GASCONADE FM.
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 279.30 | 269.20 | 258.55 | 252.55 | 253.10 | **** | 253.48 | 256.10 | 253.76 | 254.81 | 262.20 | 265.87 |
| 2 | 279.30 | 268.41 | 258.23 | 252.40 | 253.26 | **** | 253.46 | 255.97 | 253.79 | 255.37 | 262.45 | 265.92 |
| 3 | 270.40 | 267.55 | 257.96 | 252.38 | 253.45 | 252.10 | 253.65 | 255.98 | 253.79 | 255.92 | 262.53 | 266.25 |
| 4 | 270.52 | 266.52 | 257.77 | 252.30 | 253.55 | 252.09 | 253.80 | 255.75 | 253.77 | 256.45 | 262.47 | 266.42 |
| 5 | 270.75 | 265.56 | 257.30 | 252.32 | 253.62 | 252.06 | 253.75 | 255.30 | 253.78 | 256.51 | 262.47 | 266.65 |
| 6 | 270.92 | 264.88 | 256.85 | 252.35 | 253.85 | 252.05 | 253.57 | 254.98 | 253.76 | 256.72 | 262.47 | 266.92 |
| 7 | 270.85 | 264.65 | 256.37 | 252.32 | 254.25 | 251.87 | 253.46 | 254.77 | 253.65 | 256.95 | 262.47 | 267.35 |
| 8 | 270.75 | 264.43 | 256.13 | 252.40 | **** | 251.76 | 253.40 | 254.54 | 253.50 | 257.26 | 262.47 | 267.45 |
| 9 | 270.85 | 264.11 | 256.08 | 252.50 | **** | 251.70 | 253.32 | 254.40 | 253.47 | 257.55 | 262.47 | 267.72 |
| 10 | 270.95 | 263.95 | 255.82 | 252.49 | **** | 251.72 | 253.35 | 254.05 | 253.51 | 257.71 | 262.47 | 267.95 |
| 11 | 270.97 | 264.11 | 255.60 | 252.35 | **** | 251.65 | 253.39 | 254.00 | 253.44 | 257.95 | 262.47 | 268.12 |
| 12 | 270.77 | 264.24 | 255.33 | 252.23 | **** | 251.92 | 253.36 | 253.75 | 253.25 | 258.25 | 262.47 | 268.22 |
| 13 | 270.69 | 264.27 | 255.37 | 252.37 | **** | 252.00 | 253.55 | 253.58 | 252.77 | 258.66 | 262.47 | 268.29 |
| 14 | 270.65 | 264.42 | 255.42 | 252.55 | **** | 252.05 | 253.80 | 253.60 | 252.40 | 258.86 | 262.47 | 268.42 |
| 15 | 271.09 | 264.55 | 255.20 | 252.66 | **** | 251.97 | 253.96 | 253.54 | 252.18 | 259.25 | 262.47 | 268.45 |
| 16 | 271.20 | 264.66 | 254.88 | 252.50 | **** | 251.98 | 253.98 | 253.40 | 252.07 | 259.70 | 262.47 | 268.45 |
| 17 | 271.25 | 264.45 | 254.90 | 252.55 | **** | 252.00 | 254.13 | 253.27 | 252.02 | 259.95 | 262.58 | 268.66 |
| 18 | 271.40 | 264.00 | 254.92 | 252.47 | **** | 252.20 | 254.37 | 253.27 | 252.02 | 260.20 | 262.70 | 268.90 |
| 19 | 271.39 | 263.40 | 254.81 | 252.36 | **** | 252.23 | 254.70 | 253.29 | 252.11 | 260.25 | 262.70 | 268.94 |
| 20 | 271.37 | 262.10 | 254.83 | 252.32 | **** | 252.25 | 254.97 | 253.40 | 252.18 | 260.45 | 263.22 | 268.94 |
| 21 | 271.35 | 261.95 | 254.57 | 252.17 | **** | 252.55 | 254.97 | 253.45 | 252.26 | 260.65 | 263.44 | 269.16 |
| 22 | 271.43 | 261.22 | 254.07 | 252.13 | **** | 252.80 | 255.12 | 253.60 | 252.50 | 260.65 | 263.75 | 269.39 |
| 23 | 271.50 | 260.75 | 254.05 | 252.36 | **** | 252.17 | 255.35 | 253.70 | 252.73 | 260.70 | 264.10 | 269.41 |
| 24 | 271.59 | 260.25 | 253.85 | 252.40 | **** | 253.00 | 255.55 | 253.73 | 252.95 | 260.74 | 264.37 | 269.37 |
| 25 | 271.71 | 259.82 | 253.61 | 252.65 | **** | 253.15 | 255.65 | 253.72 | 253.22 | 260.99 | 264.44 | 269.40 |
| 26 | 271.79 | 259.45 | 253.40 | 252.62 | **** | 253.36 | 255.72 | 253.55 | 253.55 | 261.15 | 264.75 | 269.44 |
| 27 | 271.95 | 259.19 | 253.25 | 252.75 | **** | 253.41 | 255.83 | 253.35 | 253.87 | 261.23 | 264.86 | 269.68 |
| 28 | 272.02 | 258.89 | 253.02 | 252.80 | **** | 253.42 | 256.05 | 253.15 | 253.97 | 261.45 | 264.93 | 269.93 |
| 29 | 271.91 | 258.66 | 252.90 | 252.72 | **** | 253.46 | 256.18 | 253.20 | 254.35 | 261.70 | 265.18 | 269.93 |
| 30 | 271.45 | 258.72 | 252.87 | 252.79 | ------ | 253.47 | 256.19 | 253.33 | 254.65 | 261.90 | 265.42 | 269.93 |
| 31 | 270.16 | ------ | 252.79 | 252.90 | ------ | 253.48 | ------ | 253.62 | ------ | 262.19 | 265.70 | ------ |
| MIN | 270.16 | 258.66 | 252.79 | 252.13 | **** | 251.70 | 253.32 | 253.15 | 252.02 | 254.81 | 262.20 | 265.87 |
| MAX | 279.30 | 269.20 | 258.55 | 252.90 | **** | 253.48 | 256.19 | 256.10 | 254.65 | 262.19 | 265.70 | 269.93 |
| MEAN | 271.68 | 263.28 | 255.18 | 252.47 | **** | **** | 254.40 | 254.04 | 253.18 | 259.10 | 263.27 | 268.32 |

1992 EXTREMES: MINIMUM - 251.65 (MAR 11), MAXIMUM - 279.30 (OCT 1), MEAN - ****

Table 32. Groundwater level data, WY 1991-1992, Fairview observation well.

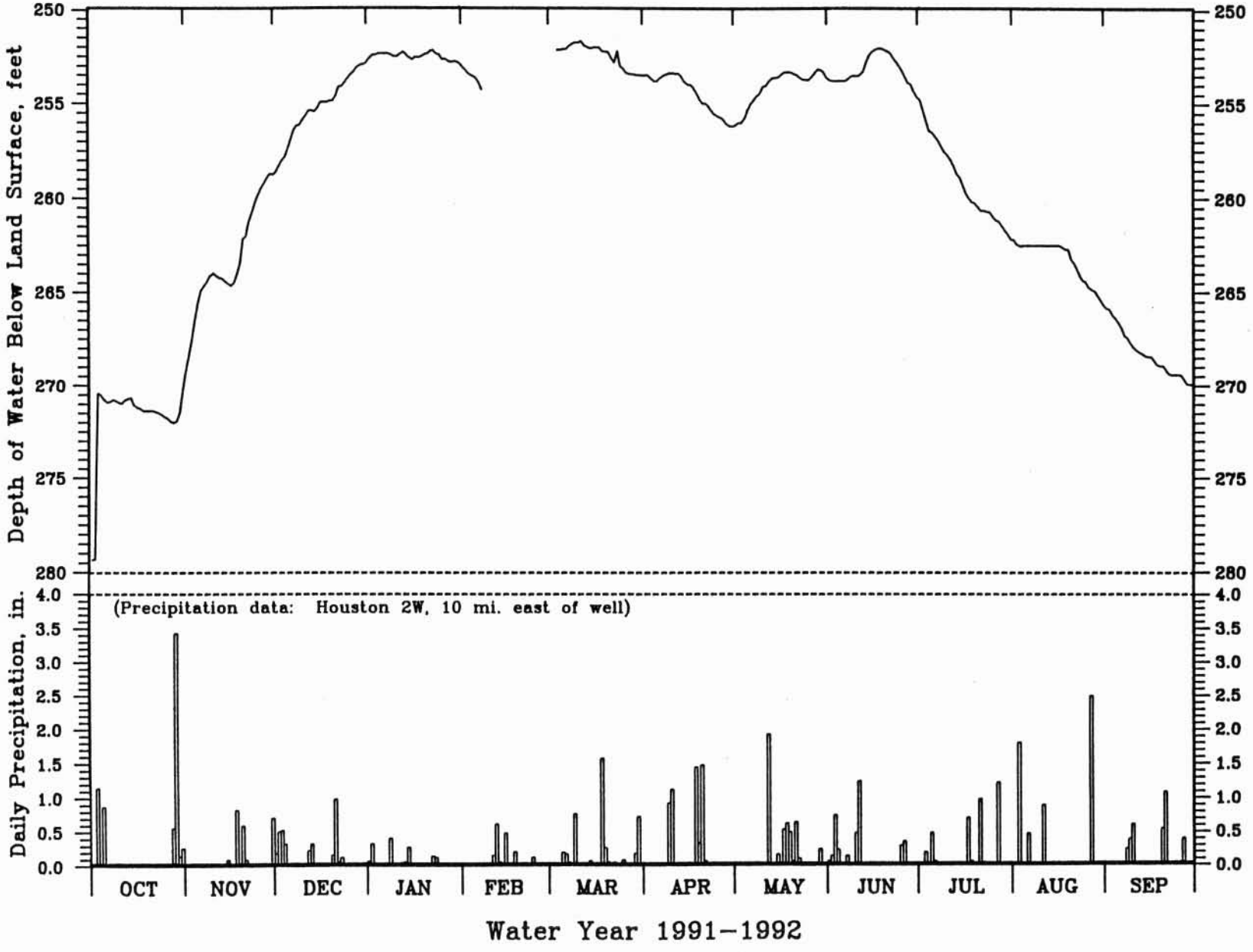



Figure 32. Water-level hydrograph and precipitation, Fairview observation well.

SHANNON COUNTY: SE1/4 SE1/4 SEC. 24, T. 31 N., R. 6 W. DGLS LOG NUMBER: NONE
37 DEG 21 MIN 53 SEC NORTH LATITUDE, 91 DEG 32 MIN 23 SEC WEST LONGITUDE WELL OWNER: OZARK NATIONAL
LAND SURFACE ELEVATION: 865 FEET ABOVE MEAN SEA LEVEL. SCENIC RIVERWAYS
MEASURING POINT IS BASE OF RECORDER BOX, 1.8 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 425 FEET WELL DIAMETER: 6 INCHES (NOTE: **** DENOTES MISSING DATA)
CASING: UNKNOWN LENGTH OF 6 INCH STEEL CASING, GROUTING UNKNOWN
FORMATIONS OPEN TO WELL: EMINENCE DOLOMITE AND POTOSI DOLOMITE
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1971, 21 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 64.45 | 64.05 | 63.91 | 63.36 | 64.27 | 64.30 | 64.52 | 61.16 | 60.70 | **** | **** | **** |
| 2 | 64.43 | 64.15 | 63.61 | 63.35 | 64.27 | 64.30 | 64.55 | 61.30 | 60.64 | **** | **** | **** |
| 3 | 64.43 | 64.15 | 63.61 | 63.35 | 64.27 | 64.30 | 64.45 | 61.36 | 60.57 | **** | **** | **** |
| 4 | 64.46 | 64.16 | 63.55 | 63.35 | 64.27 | 64.30 | 64.45 | 61.34 | 60.56 | **** | **** | **** |
| 5 | 64.60 | 64.10 | 63.40 | 63.37 | 64.27 | 64.86 | 64.60 | 61.40 | 60.60 | **** | **** | **** |
| 6 | 64.70 | 64.17 | 63.34 | 63.45 | 64.29 | 64.85 | 64.60 | 61.55 | 60.67 | **** | **** | **** |
| 7 | 64.74 | 64.25 | 63.28 | 63.45 | 64.30 | 64.87 | 64.60 | 61.64 | 60.75 | **** | **** | **** |
| 8 | 64.73 | 64.42 | 63.28 | 63.45 | 64.30 | 64.90 | 64.60 | 61.60 | 60.80 | **** | **** | **** |
| 9 | 64.73 | 64.30 | 63.35 | 63.55 | 64.30 | 64.88 | 64.60 | 61.58 | 60.80 | **** | **** | **** |
| 10 | 64.73 | 64.26 | 63.40 | 63.55 | 64.30 | 64.87 | 64.55 | 61.63 | 60.69 | **** | **** | **** |
| 11 | 64.73 | 64.30 | 63.32 | 63.55 | 64.30 | 64.90 | 64.47 | 61.66 | 60.67 | **** | **** | **** |
| 12 | 64.76 | 64.30 | 63.22 | 63.53 | 64.30 | 64.90 | 64.55 | 61.65 | 60.65 | **** | **** | **** |
| 13 | 64.80 | 64.30 | 63.40 | 63.60 | 64.29 | 64.90 | 64.55 | 61.70 | 60.65 | **** | **** | **** |
| 14 | 64.80 | 64.30 | 63.55 | 63.80 | 64.30 | 64.90 | 64.47 | 61.67 | 60.63 | **** | **** | **** |
| 15 | 64.80 | 64.30 | 63.54 | 63.80 | 64.30 | 64.90 | 64.37 | 61.77 | 60.75 | **** | **** | **** |
| 16 | 64.93 | 64.30 | 63.50 | 63.77 | 64.27 | 64.90 | 64.30 | 61.83 | 60.78 | **** | **** | **** |
| 17 | 65.05 | 64.27 | 63.58 | 63.96 | 64.27 | 64.90 | 64.27 | 61.91 | 60.80 | **** | **** | **** |
| 18 | 65.10 | 64.26 | 63.71 | 63.95 | 64.30 | 64.85 | 64.03 | 61.95 | 60.80 | **** | **** | **** |
| 19 | 65.18 | 64.23 | 63.70 | 63.90 | 64.29 | 64.85 | 63.05 | 61.95 | 60.80 | **** | **** | **** |
| 20 | 65.25 | 64.20 | 63.62 | 63.90 | 64.29 | 64.87 | 61.68 | 61.95 | 60.80 | **** | **** | **** |
| 21 | 65.25 | 64.05 | 63.36 | 63.83 | 64.25 | 64.75 | 61.37 | 61.95 | 60.80 | **** | **** | **** |
| 22 | 65.20 | 63.95 | 63.17 | 63.92 | 64.18 | 64.62 | 61.44 | 61.45 | 60.80 | **** | **** | **** |
| 23 | 65.26 | 63.97 | 63.25 | 64.00 | 64.19 | 64.66 | 61.42 | 61.10 | 60.97 | **** | **** | **** |
| 24 | 65.30 | 64.05 | 63.32 | 64.10 | 64.20 | 64.66 | 61.40 | 60.85 | 61.16 | **** | **** | **** |
| 25 | 65.30 | 64.07 | 63.32 | 64.16 | 64.20 | 64.66 | 61.35 | 60.73 | 61.23 | **** | **** | **** |
| 26 | 65.30 | 64.05 | 63.32 | 64.16 | 64.20 | 64.66 | 61.32 | 60.72 | 61.28 | **** | **** | **** |
| 27 | 65.30 | 64.03 | 63.32 | 64.16 | 64.22 | 64.66 | 61.30 | 60.70 | 61.30 | **** | **** | **** |
| 28 | 65.18 | 64.01 | 63.32 | 64.16 | 64.29 | 64.64 | 61.25 | 60.65 | **** | **** | **** | **** |
| 29 | 64.62 | 63.95 | 63.35 | 64.13 | 64.29 | 64.57 | 61.15 | 60.57 | **** | **** | **** | **** |
| 30 | 64.30 | 64.07 | 63.41 | 64.16 | ------ | 64.55 | 61.17 | 60.60 | **** | **** | **** | **** |
| 31 | 64.20 | ------ | 63.41 | 64.25 | ------ | 64.53 | ------ | 60.70 | ------ | **** | **** | ------ |
| MIN | 64.20 | 63.95 | 63.17 | 63.35 | 64.18 | 64.30 | 61.15 | 60.57 | 60.56 | **** | **** | **** |
| MAX | 65.30 | 64.42 | 63.91 | 64.25 | 64.30 | 64.90 | 64.60 | 61.95 | 61.30 | **** | **** | **** |
| MEAN | 64.86 | 64.17 | 63.43 | 63.77 | 64.27 | 64.72 | 63.28 | 61.37 | **** | **** | **** | **** |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 33. Groundwater level data, WY 1991-1992, Akers observation well.

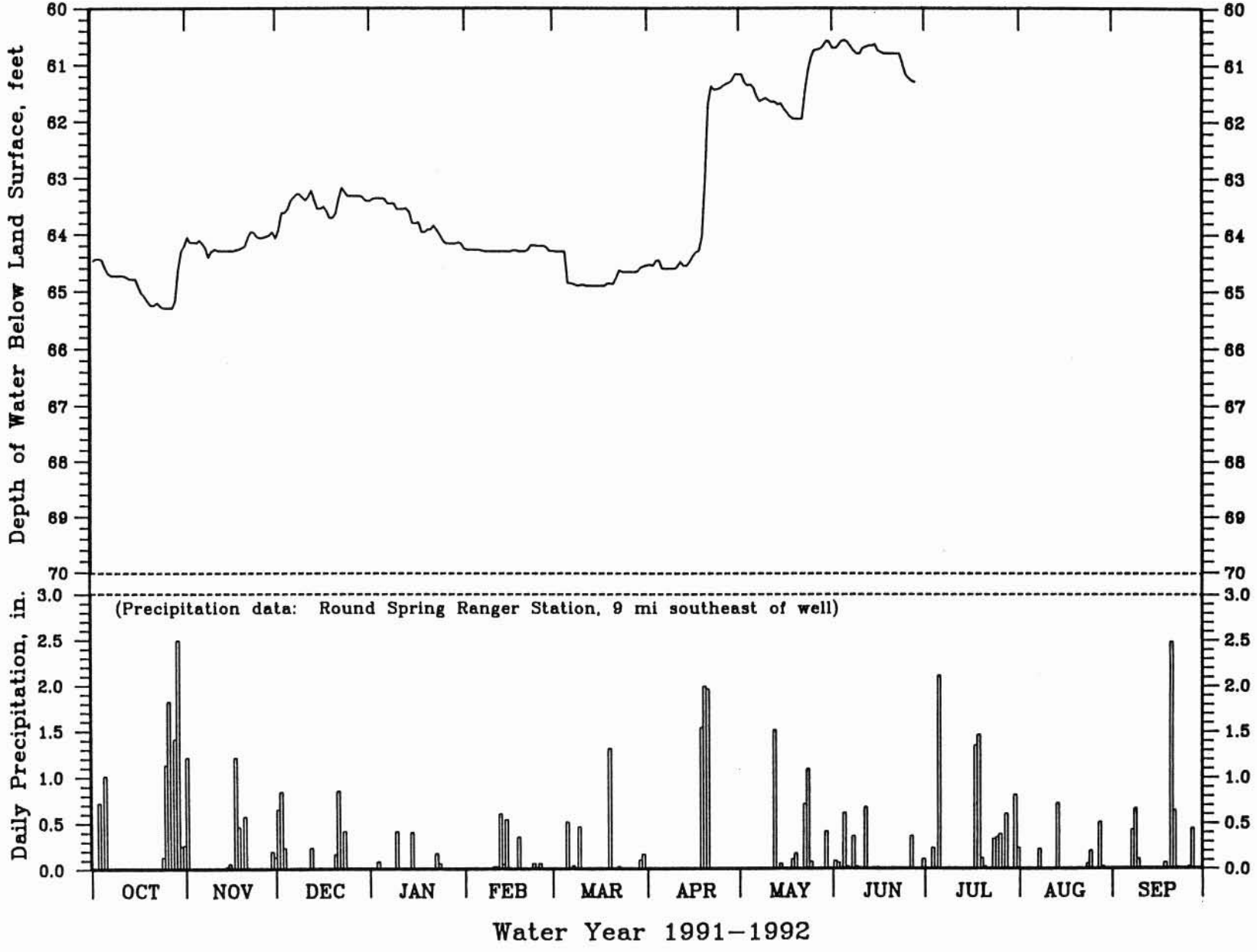



Figure 33. Water-level hydrograph and precipitation, Akers observation well.

IRON COUNTY: SW1/4 SW1/4 SEC. 1, T. 34 N., R. 2 W. DGLS LOG NUMBER: NONE
37 DEG 39 MIN 55 SEC NORTH LATITUDE, 91 DEG 07 MIN 29 SEC WEST LONGITUDE WELL OWNER: CLAUDE BARTON
LAND SURFACE ELEVATION: 1380 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX 1 FT ABOVE GROUND LEVEL
TOTAL DEPTH: 640 FEET WELL DIAMETER: 6 INCHES
CASING: 120 FEET OF 6.25 INCH STEEL CASING, NOT PRESSURE GROUTED
FORMATIONS OPEN TO WELL: EMINENCE DOLOMITE, POTOSI DOLOMITE, AND DERBY-DOERUN DOLOMITE
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1987, 5 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 181.49 | 181.56 | 181.72 | 181.23 | 180.69 | 180.22 | 179.66 | 178.79 | 177.96 | 177.37 | 177.43 | 177.59 |
| 2 | 181.45 | 181.81 | 181.50 | 181.09 | 180.67 | 180.20 | 179.64 | 178.82 | 177.89 | 177.37 | 177.34 | 177.51 |
| 3 | 181.50 | 181.89 | 181.55 | 181.09 | 180.63 | 180.14 | 179.45 | 178.86 | 177.76 | 177.52 | 177.34 | 177.65 |
| 4 | 181.48 | 181.82 | 181.68 | 181.12 | 180.61 | 180.09 | 179.47 | 178.73 | 177.75 | 177.48 | 177.39 | 177.70 |
| 5 | 181.70 | 181.69 | 181.65 | 181.08 | 180.55 | 180.02 | 179.66 | 178.76 | 177.78 | 177.36 | 177.40 | 177.65 |
| 6 | 181.74 | 181.70 | 181.56 | 181.08 | 180.47 | 179.99 | 179.56 | 178.86 | 177.78 | 177.38 | 177.39 | 177.68 |
| 7 | 181.65 | 181.76 | 181.45 | 181.09 | 180.52 | 180.08 | 179.52 | 178.78 | 177.91 | 177.39 | 177.34 | 177.69 |
| 8 | 181.59 | 181.81 | 181.45 | 181.00 | 180.62 | 180.08 | 179.50 | 178.59 | 177.87 | 177.37 | 177.35 | 177.70 |
| 9 | 181.63 | 181.76 | 181.58 | 181.07 | 180.70 | 179.89 | 179.46 | 178.55 | 177.79 | 177.39 | 177.41 | 177.62 |
| 10 | 181.62 | 181.68 | 181.58 | 181.12 | 180.61 | 180.02 | 179.40 | 178.59 | 177.75 | 177.37 | 177.36 | 177.81 |
| 11 | 181.51 | 181.76 | 181.53 | 181.04 | 180.62 | 180.04 | 179.43 | 178.51 | 177.76 | 177.36 | 177.42 | 177.86 |
| 12 | 181.62 | 181.76 | 181.37 | 180.90 | 180.49 | 180.00 | 179.65 | 178.42 | 177.72 | 177.32 | 177.45 | 177.81 |
| 13 | 181.66 | 181.68 | 181.43 | 180.82 | 180.43 | 180.05 | 179.54 | 178.51 | 177.65 | 177.33 | 177.45 | 177.76 |
| 14 | 181.61 | 181.67 | 181.68 | 180.97 | 180.31 | 179.99 | 179.39 | 178.42 | 177.63 | 177.29 | 177.49 | 177.79 |
| 15 | 181.68 | 181.74 | 181.64 | 181.04 | 180.31 | 180.09 | 179.31 | 178.42 | 177.62 | 177.33 | 177.49 | 177.83 |
| 16 | 181.72 | 181.80 | 181.50 | 180.98 | 180.49 | 179.97 | 179.27 | 178.42 | 177.62 | 177.34 | 177.45 | 177.82 |
| 17 | 181.68 | 181.68 | 181.48 | 180.98 | 180.30 | 179.86 | 179.28 | 178.43 | 177.59 | 177.40 | 177.46 | 177.77 |
| 18 | 181.75 | 181.60 | 181.63 | 181.09 | 180.28 | 179.69 | 179.15 | 178.42 | 177.62 | 177.42 | 177.47 | 177.78 |
| 19 | 181.82 | 181.68 | 181.60 | 180.98 | 180.45 | 179.89 | 179.07 | 178.37 | 177.59 | 177.37 | 177.46 | 177.87 |
| 20 | 181.72 | 181.73 | 181.45 | 180.89 | 180.46 | 179.97 | 178.96 | 178.34 | 177.58 | 177.35 | 177.48 | 177.73 |
| 21 | 181.66 | 181.74 | 181.43 | 180.81 | 180.40 | 179.80 | 179.05 | 178.31 | 177.65 | 177.36 | 177.52 | 177.78 |
| 22 | 181.70 | 181.66 | 181.22 | 180.63 | 180.31 | 179.77 | 179.18 | 178.27 | 177.57 | 177.33 | 177.51 | 178.00 |
| 23 | 181.72 | 181.70 | 181.14 | 180.66 | 180.22 | 179.85 | 179.11 | 178.20 | 177.42 | 177.35 | 177.51 | 178.06 |
| 24 | 181.74 | 181.75 | 181.34 | 180.82 | 180.27 | 179.84 | 179.13 | 178.17 | 177.40 | 177.37 | 177.55 | 177.97 |
| 25 | 181.75 | 181.80 | 181.34 | 180.82 | 180.27 | 179.76 | 179.09 | 178.08 | 177.45 | 177.34 | 177.55 | 177.93 |
| 26 | 181.75 | 181.69 | 181.33 | 180.92 | 180.20 | 179.73 | 179.10 | 178.08 | 177.52 | 177.28 | 177.52 | 177.94 |
| 27 | 181.78 | 181.65 | 181.35 | 180.83 | 180.18 | 179.86 | 179.09 | 178.10 | 177.53 | 177.32 | 177.49 | 178.05 |
| 28 | 181.74 | 181.60 | 181.21 | 180.83 | 180.12 | 179.76 | 178.98 | 178.06 | 177.45 | 177.35 | 177.54 | 178.11 |
| 29 | 181.81 | 181.52 | 181.20 | 180.76 | 180.30 | 179.60 | 178.85 | 178.00 | 177.41 | 177.31 | 177.55 | 178.14 |
| 30 | 181.86 | 181.68 | 181.28 | 180.61 | ------ | 179.71 | 178.82 | 178.04 | 177.37 | 177.28 | 177.60 | 178.08 |
| 31 | 181.66 | ------ | 181.32 | 180.65 | ------ | 179.66 | ------ | 178.04 | ------ | 177.41 | 177.63 | ------ |
| MIN | 181.45 | 181.52 | 181.14 | 180.61 | 180.12 | 179.60 | 178.82 | 178.00 | 177.37 | 177.28 | 177.34 | 177.51 |
| MAX | 181.86 | 181.89 | 181.72 | 181.23 | 180.70 | 180.22 | 179.66 | 178.86 | 177.96 | 177.52 | 177.63 | 178.14 |
| MEAN | 181.67 | 181.71 | 181.46 | 180.94 | 180.43 | 179.92 | 179.29 | 178.42 | 177.65 | 177.36 | 177.46 | 177.82 |

1992 EXTREMES: MINIMUM - 177.28 (JUL 26), MAXIMUM - 181.89 (NOV 3), AVERAGE - 179.51

Table 34. Groundwater level data, WY 1991-1992, Bixby observation well.

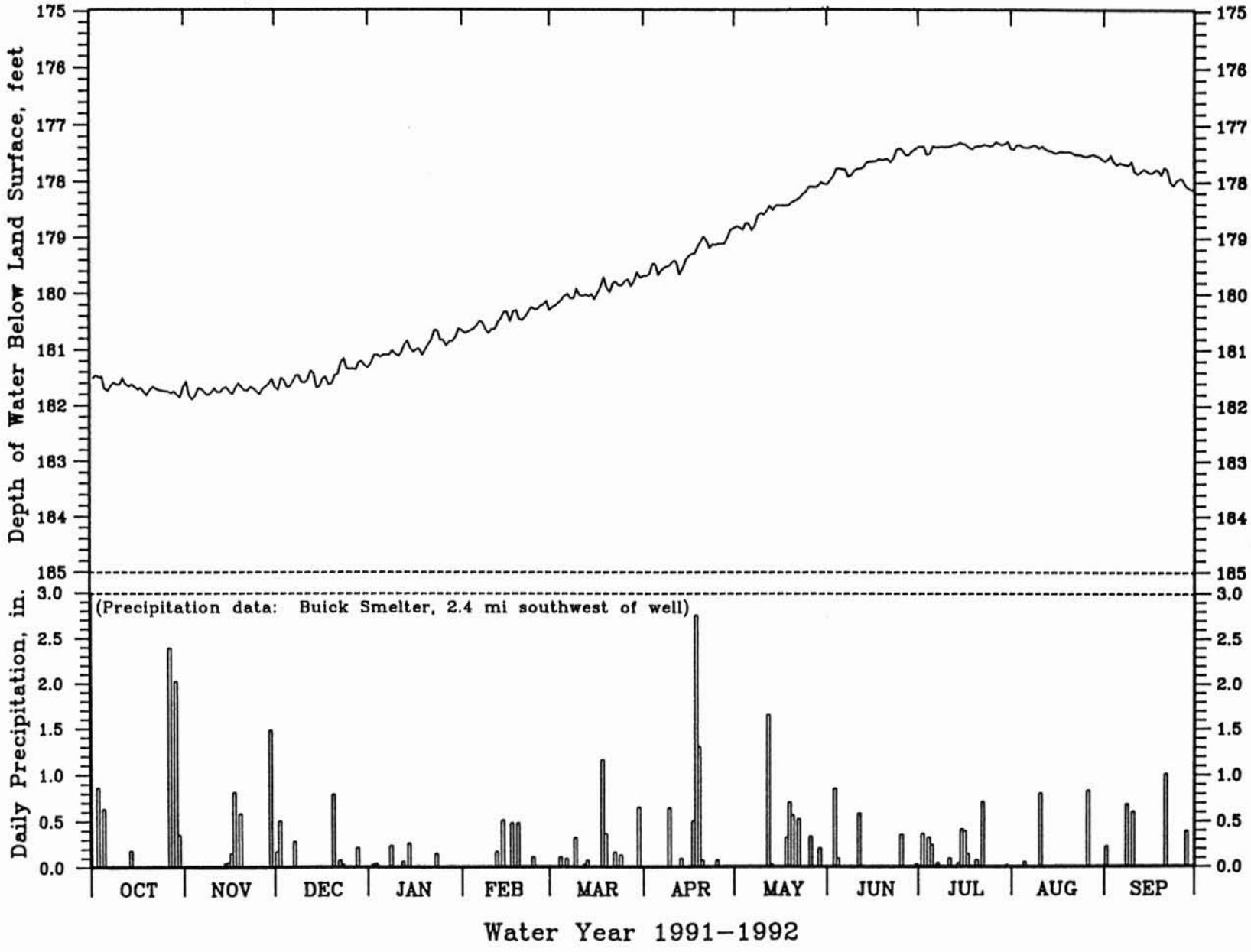



Figure 34. Water-level hydrograph and precipitation, Bixby observation well.

WASHINGTON COUNTY: NW1/4 SE1/4 SEC. 11, T. 37 N., R. 2 E. DGLS LOG NUMBER: 10680
37 DEG 56 MIN 17 SEC NORTH LATITUDE, 90 DEG 46 MIN 54 SEC WEST LONGITUDE WELL OWNER: CITY OF POTOSI, WELL #3
LAND SURFACE ELEVATION: 930 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.0 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 1100 FEET WELL DIAMETER: 10 INCHES (NOTE: **** DENOTES MISSING DATA)
CASING: 348 FEET OF 10 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: POTOSI DOL., DERBY-DOERUN DOL., DAVIS FM., BONNETERRE FM., AND LAMOTTE SANDSTONE
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1990), GRAPHIC RECORDER INSTALLED IN 1988, 4 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 220.61 | 218.98 | 219.00 | 213.95 | 212.51 | **** | **** | **** | **** | **** | **** | **** |
| 2 | 218.79 | 217.16 | 213.31 | 209.80 | 210.80 | **** | **** | **** | **** | **** | **** | **** |
| 3 | 219.27 | 220.71 | 215.52 | 209.46 | 213.46 | **** | **** | **** | **** | **** | **** | **** |
| 4 | 218.18 | 215.49 | 218.10 | 214.87 | 215.80 | **** | **** | **** | **** | **** | **** | **** |
| 5 | 219.67 | 220.09 | 216.48 | 210.55 | 211.05 | **** | **** | **** | **** | **** | **** | **** |
| 6 | 219.54 | 218.35 | 218.46 | 209.33 | 210.61 | **** | **** | **** | **** | **** | **** | **** |
| 7 | 218.19 | 219.14 | 213.14 | 213.13 | 215.41 | **** | **** | **** | **** | **** | **** | **** |
| 8 | 219.30 | 217.98 | 213.00 | 214.43 | 210.97 | **** | **** | **** | **** | **** | **** | **** |
| 9 | 218.36 | 219.30 | 217.20 | 210.32 | 210.10 | **** | **** | **** | **** | **** | **** | **** |
| 10 | 219.37 | 217.02 | 212.46 | 210.31 | 213.47 | **** | **** | **** | **** | **** | **** | **** |
| 11 | 218.19 | 220.09 | 211.66 | 215.56 | 213.79 | **** | **** | **** | **** | **** | **** | **** |
| 12 | 219.64 | 218.18 | 216.51 | 210.54 | 210.27 | **** | **** | **** | **** | **** | **** | **** |
| 13 | 219.68 | 219.16 | 212.12 | 209.27 | 211.17 | **** | **** | **** | **** | **** | **** | **** |
| 14 | 215.93 | 217.58 | 211.35 | 212.05 | **** | **** | **** | **** | **** | **** | **** | **** |
| 15 | 220.53 | 219.35 | 214.66 | 211.13 | **** | **** | **** | **** | **** | **** | **** | **** |
| 16 | 219.23 | 217.20 | 214.99 | 209.61 | **** | **** | **** | **** | **** | **** | **** | **** |
| 17 | 219.15 | 218.56 | 217.92 | 214.07 | **** | **** | **** | **** | **** | **** | **** | **** |
| 18 | 220.87 | 216.25 | 214.47 | 214.68 | **** | **** | **** | **** | **** | **** | **** | **** |
| 19 | 219.62 | 219.17 | 212.22 | 210.96 | **** | **** | **** | **** | **** | **** | **** | **** |
| 20 | 219.50 | 217.15 | 214.16 | 213.23 | **** | **** | **** | **** | **** | **** | **** | **** |
| 21 | 218.61 | 218.08 | 216.69 | 222.01 | **** | **** | **** | **** | **** | **** | **** | **** |
| 22 | 219.44 | 216.55 | 211.50 | 216.57 | **** | **** | **** | **** | **** | **** | **** | **** |
| 23 | 218.11 | 218.66 | 210.43 | 218.48 | **** | **** | **** | **** | **** | **** | **** | **** |
| 24 | 220.56 | 214.34 | 215.38 | 219.40 | **** | **** | **** | **** | **** | **** | **** | **** |
| 25 | 219.11 | 219.12 | 211.99 | 220.25 | **** | **** | **** | **** | **** | **** | **** | **** |
| 26 | 219.63 | 216.27 | 210.09 | 214.32 | **** | **** | **** | **** | **** | **** | **** | **** |
| 27 | 217.59 | 218.79 | 212.96 | 212.75 | **** | **** | **** | **** | **** | **** | **** | **** |
| 28 | 219.35 | 216.09 | 215.02 | 217.51 | **** | **** | **** | **** | **** | **** | **** | **** |
| 29 | 217.99 | 219.21 | 210.38 | 212.73 | **** | **** | **** | **** | **** | **** | **** | **** |
| 30 | 220.18 | 216.31 | 209.71 | 211.22 | ------ | **** | **** | **** | **** | **** | **** | **** |
| 31 | 218.12 | ------ | 213.44 | 216.17 | ------ | **** | ------ | **** | ------ | **** | **** | ------ |
| MIN | 215.93 | 214.34 | 209.71 | 209.27 | **** | **** | **** | **** | **** | **** | **** | **** |
| MAX | 220.87 | 220.71 | 219.00 | 222.01 | **** | **** | **** | **** | **** | **** | **** | **** |
| MEAN | 219.11 | 218.01 | 214.01 | 213.51 | **** | **** | **** | **** | **** | **** | **** | **** |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 35. Groundwater level data, WY 1991-1992, Potosi observation well.

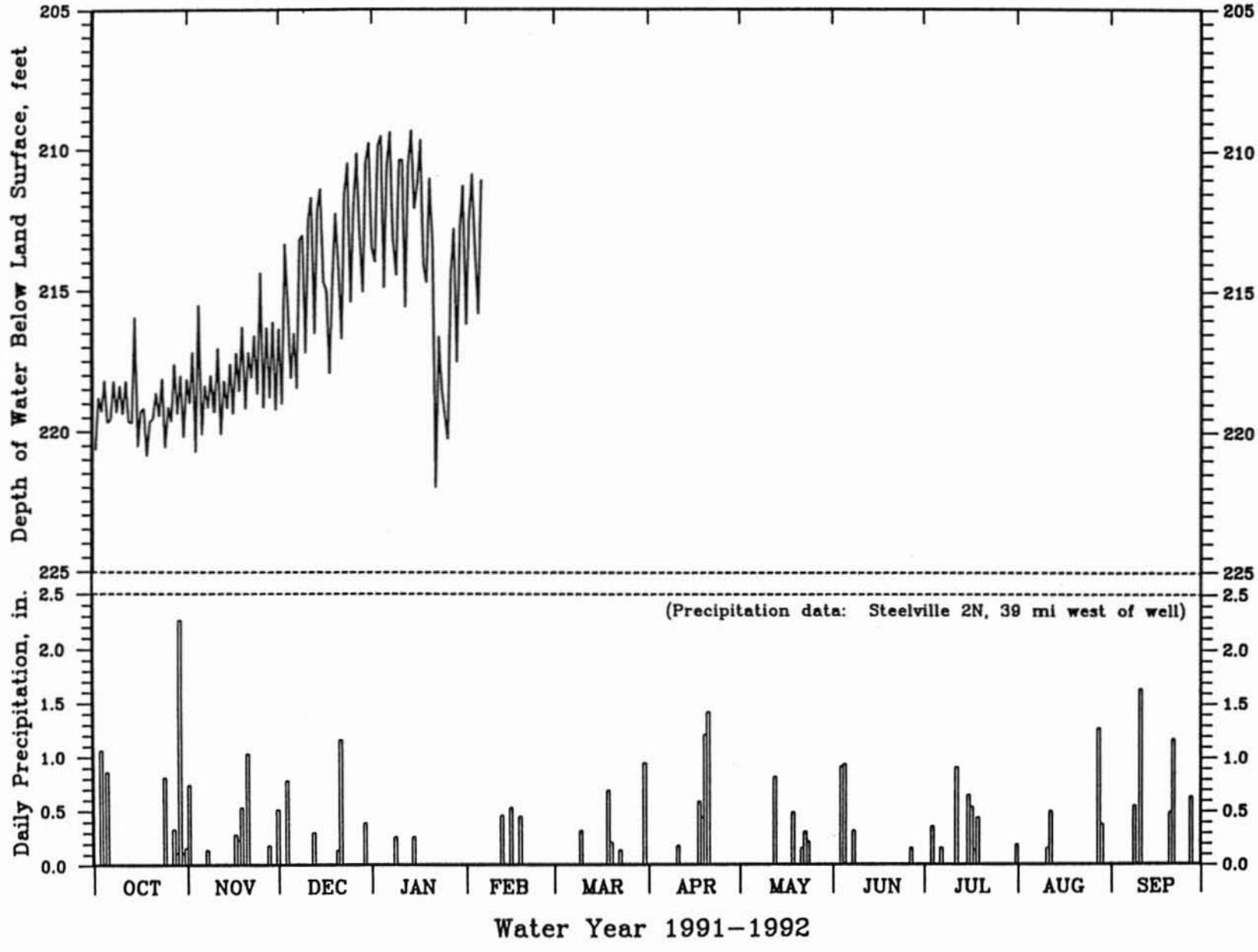



Figure 35. Water-level hydrograph and precipitation, Potosi observation well.

JEFFERSON COUNTY: NE1/4 SE1/4 SEC. 22, T. 39 N., R. 4 E. DGLS LOG NUMBER: NONE
38 DEG 05 MIN 01 SEC NORTH LATITUDE, 90 DEG 33 MIN 55 SEC WEST LONGITUDE WELL OWNER: CHARLES L. CAMPBELL
LAND SURFACE ELEVATION: 790 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 0.9 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 1500 FEET WELL DIAMETER: NA (NOTE: **** DENOTES MISSING DATA)
CASING: NA
FORMATIONS OPEN TO WELL: JEFFERSON CITY DOL., ROUBIDOUX FM., GASCONADE DOL., EMINENCE DOL., POTOSI DOL., DERBY-DOERUN DOL., DAVIS FM., BONNETERRE FM.
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1960, 32 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 117.66 | 115.59 | 118.85 | 118.73 | 117.97 | 118.10 | 117.87 | **** | **** | 116.04 | 118.55 | 117.25 |
| 2 | 116.34 | 118.69 | 117.25 | 117.01 | 117.95 | 117.90 | 118.08 | **** | **** | 115.95 | 117.75 | 115.90 |
| 3 | 116.09 | 120.40 | 116.61 | 116.37 | 117.57 | 117.70 | 116.77 | **** | **** | 117.25 | 117.13 | 116.74 |
| 4 | 115.63 | 120.34 | 119.18 | 116.88 | 117.25 | 117.34 | 115.68 | **** | **** | 118.20 | 117.65 | 117.60 |
| 5 | 117.16 | 118.59 | 118.70 | 116.84 | 117.13 | 116.67 | 118.26 | **** | **** | 117.25 | 117.97 | 117.21 |
| 6 | 119.21 | 117.77 | 118.04 | 116.63 | 116.07 | 116.00 | 118.27 | **** | **** | 117.22 | 118.15 | 117.12 |
| 7 | 119.29 | 119.08 | 116.71 | 117.04 | 116.00 | 116.51 | 117.57 | **** | **** | 117.55 | 117.40 | 117.13 |
| 8 | 118.07 | 120.44 | 116.30 | 116.20 | 117.41 | 117.50 | 117.75 | **** | **** | 117.40 | 117.04 | 117.00 |
| 9 | 117.90 | 119.61 | 117.62 | 116.55 | 119.04 | 116.09 | 117.03 | **** | **** | 117.45 | 117.45 | 116.25 |
| 10 | 117.68 | 117.98 | 118.43 | 117.76 | 118.81 | 116.29 | **** | **** | **** | 117.51 | 117.20 | 117.62 |
| 11 | 116.31 | 118.05 | 118.20 | 117.67 | 118.89 | 117.83 | **** | **** | **** | 117.45 | 117.43 | 118.77 |
| 12 | 116.48 | 118.22 | 116.56 | 116.28 | 118.59 | 117.05 | **** | **** | **** | 116.98 | 117.91 | 118.30 |
| 13 | 117.51 | 117.16 | 116.66 | 115.10 | 117.10 | 118.32 | **** | **** | **** | 116.70 | 118.05 | 117.34 |
| 14 | 116.58 | 116.32 | 118.77 | 116.00 | 116.31 | 117.76 | **** | **** | **** | 116.45 | 118.42 | 117.31 |
| 15 | 116.93 | 116.74 | 120.16 | 118.00 | 114.90 | 118.83 | **** | **** | **** | 116.60 | 118.53 | 117.66 |
| 16 | 117.87 | 117.96 | 119.51 | 118.82 | 117.52 | 118.96 | **** | **** | **** | 116.78 | 118.04 | 117.33 |
| 17 | 117.47 | 117.26 | 118.41 | 117.71 | 116.90 | 117.07 | **** | **** | **** | 117.50 | 117.83 | 116.30 |
| 18 | 117.83 | 115.35 | 120.42 | 119.54 | 115.67 | 115.71 | **** | **** | 116.44 | 118.41 | 117.57 | 116.35 |
| 19 | 119.57 | 115.96 | 121.47 | 119.47 | 117.39 | 116.49 | **** | **** | 116.68 | 118.28 | 117.35 | 116.75 |
| 20 | 119.13 | 116.73 | 120.22 | 117.91 | 118.81 | 118.49 | **** | **** | 116.82 | 118.07 | 117.45 | 115.65 |
| 21 | 117.61 | 117.68 | 119.47 | 117.33 | 118.46 | 117.90 | **** | **** | 117.93 | 118.17 | 117.75 | 115.70 |
| 22 | 117.02 | 117.15 | 117.47 | 115.78 | 117.90 | 116.78 | **** | **** | 118.18 | 118.00 | 117.65 | 117.50 |
| 23 | 116.93 | 117.21 | 115.22 | 114.98 | 116.93 | 118.07 | **** | **** | 116.55 | 118.05 | 117.40 | 118.94 |
| 24 | 116.88 | 118.22 | 117.53 | 117.32 | 117.28 | 118.35 | **** | **** | 115.50 | 118.20 | 117.61 | 118.17 |
| 25 | 117.13 | 119.50 | 118.28 | 117.41 | 117.84 | 117.84 | **** | **** | 115.85 | 117.85 | 117.74 | 117.21 |
| 26 | 117.14 | 119.08 | 118.35 | 119.39 | 117.37 | 117.27 | **** | **** | 116.72 | 119.95 | 117.28 | 116.82 |
| 27 | 117.61 | 117.98 | 118.89 | 118.88 | 116.66 | 118.71 | **** | **** | 117.50 | 117.05 | 116.72 | 117.86 |
| 28 | 117.21 | 117.51 | 117.86 | 119.47 | 116.08 | 118.93 | **** | **** | 117.31 | 117.45 | 116.84 | 119.10 |
| 29 | 117.66 | 116.51 | 117.00 | 119.05 | 117.80 | 117.18 | **** | **** | 116.88 | 117.14 | 116.83 | 119.40 |
| 30 | 119.27 | 116.78 | 118.07 | 117.32 | ------ | 117.16 | **** | **** | 116.50 | 116.55 | 117.20 | 118.70 |
| 31 | 118.24 | ------ | 119.11 | 116.94 | ------ | 117.85 | ------ | **** | ------ | 117.54 | 117.84 | ------ |
| MIN | 115.63 | 115.35 | 115.22 | 114.98 | 114.90 | 115.71 | **** | **** | **** | 115.95 | 116.72 | 115.65 |
| MAX | 119.57 | 120.44 | 121.47 | 119.54 | 119.04 | 118.96 | **** | **** | **** | 119.95 | 118.55 | 119.40 |
| MEAN | 117.53 | 117.86 | 118.24 | 117.43 | 117.37 | 117.50 | **** | **** | **** | 117.45 | 117.60 | 117.37 |

1992 EXTREMES: MINIMUM - 114.90 (FEB 15), MAXIMUM - 121.47 (DEC 19), MEAN - ****

Table 36. Groundwater level data, WY 1991-1992, DeSoto observation well.

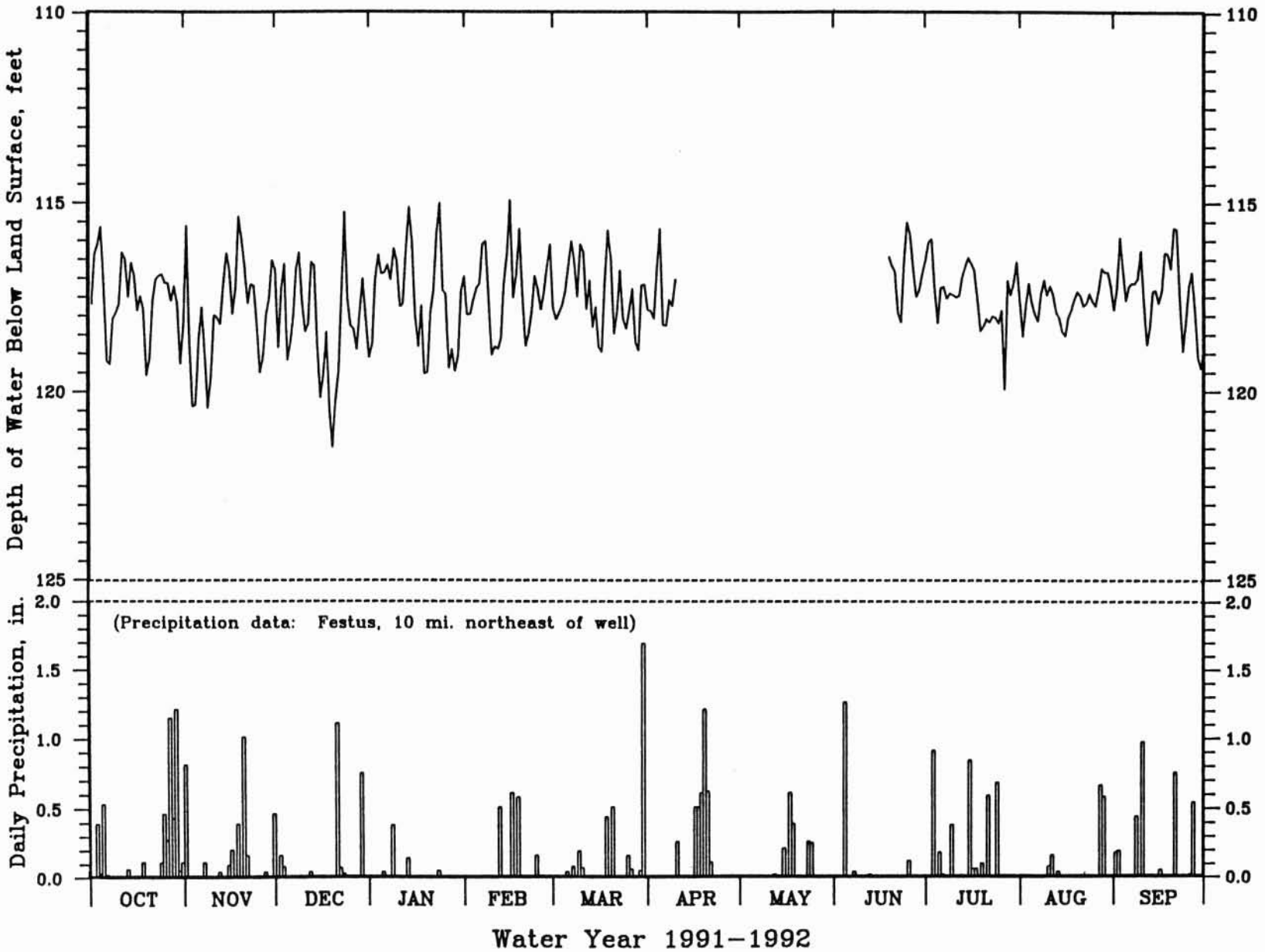



Figure 36. Water-level hydrograph and precipitation, DeSoto observation well.

PERRY COUNTY: SE1/4 SW1/4 SEC. 34, T. 34 N., R. 8 E. DGLS LOG NUMBER: NONE
37 DEG 35 MIN 59 SEC NORTH LATITUDE, 90 DEG 08 MIN 29 SEC WEST LONGITUDE WELL OWNER: NA
LAND SURFACE ELEVATION: 990 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.4 FEET ABOVE LAND SURFACE (NOTE: **** DENOTES MISSING DATA)
TOTAL DEPTH: 1526 FEET WELL DIAMETER: NA
CASING: NA
FORMATIONS OPEN TO WELL: 700 FT UNKNOWN, DERBY-DOERUN DOL., DAVIS FM., BONNETERRE FM., AND LAMOTTE SANDSTONE
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1990), GRAPHIC RECORDER INSTALLED IN 1960, 32 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 179.45 | 177.35 | 177.66 | 176.88 | 176.60 | 178.32 | 179.00 | 179.80 | 179.75 | **** | **** | **** |
| 2 | 179.42 | 178.00 | 177.00 | 176.42 | 176.50 | 178.35 | 179.05 | 179.70 | 179.95 | **** | **** | **** |
| 3 | 179.46 | 178.42 | 177.15 | 176.40 | 176.31 | 178.55 | 179.50 | 179.44 | 180.22 | **** | **** | **** |
| 4 | 179.65 | 178.23 | 177.80 | 176.48 | 176.24 | 178.60 | 179.50 | 179.70 | 180.23 | **** | **** | **** |
| 5 | 179.80 | 177.78 | 177.62 | 176.39 | 176.06 | 178.80 | 178.80 | 179.42 | 180.15 | **** | **** | **** |
| 6 | 179.82 | 177.62 | 177.40 | 176.41 | 175.95 | 178.91 | 178.88 | 179.23 | 180.10 | **** | **** | **** |
| 7 | 179.97 | 178.05 | 177.10 | 176.40 | 176.02 | 178.70 | 178.97 | 179.30 | **** | **** | **** | **** |
| 8 | 179.95 | 178.20 | 177.05 | 176.29 | 176.50 | 178.60 | 179.05 | 179.66 | **** | **** | **** | **** |
| 9 | 179.97 | 177.90 | 177.15 | 176.40 | 176.78 | 179.00 | 179.10 | 179.78 | **** | **** | **** | **** |
| 10 | 179.80 | 177.50 | 177.41 | 176.70 | 176.68 | 178.80 | 179.28 | 179.52 | **** | **** | **** | **** |
| 11 | 179.85 | 177.68 | 177.40 | 176.52 | 176.70 | 178.60 | 179.20 | 179.70 | **** | **** | **** | **** |
| 12 | 179.90 | 177.72 | 177.05 | 176.11 | 176.40 | 178.68 | 178.60 | 179.82 | **** | **** | **** | **** |
| 13 | 179.92 | 177.52 | 176.97 | 175.70 | 176.30 | 178.42 | 178.71 | 179.55 | **** | **** | **** | **** |
| 14 | 179.85 | 177.30 | 177.70 | 176.21 | 175.65 | 178.58 | 179.10 | 179.50 | **** | **** | **** | **** |
| 15 | 179.89 | 177.41 | 177.80 | 176.81 | 175.82 | 178.30 | 179.29 | 179.41 | **** | **** | **** | **** |
| 16 | 179.87 | 177.68 | 177.55 | 176.61 | 176.10 | 178.41 | 179.40 | 179.30 | **** | **** | **** | **** |
| 17 | 179.92 | 177.38 | 177.40 | 176.70 | 175.71 | 178.70 | 179.41 | 179.24 | **** | **** | **** | **** |
| 18 | 179.79 | 177.15 | 177.92 | 177.06 | 175.81 | 179.35 | 179.62 | 179.24 | **** | **** | **** | **** |
| 19 | 179.81 | 177.30 | 177.88 | 176.78 | 176.20 | 178.92 | 179.80 | 179.26 | **** | **** | **** | **** |
| 20 | 179.90 | 177.50 | 177.62 | 176.59 | 178.23 | 178.51 | 180.08 | 179.25 | **** | **** | **** | **** |
| 21 | 178.42 | 177.52 | 177.40 | 176.23 | 178.24 | 178.80 | 179.92 | 179.25 | **** | **** | **** | **** |
| 22 | 178.51 | 177.44 | 176.75 | 175.81 | 178.32 | 179.05 | 179.51 | 179.30 | **** | **** | **** | **** |
| 23 | 178.73 | 177.50 | 176.55 | 175.98 | 178.55 | 178.75 | 179.54 | 179.55 | **** | **** | **** | **** |
| 24 | 178.55 | 177.72 | 176.98 | 176.40 | 178.52 | 178.70 | 179.48 | 179.75 | **** | **** | **** | **** |
| 25 | 178.62 | 178.00 | 177.14 | 176.70 | 178.47 | 178.80 | 179.40 | 179.98 | **** | **** | **** | **** |
| 26 | 178.50 | 177.78 | 177.20 | 176.90 | 178.60 | 178.95 | 179.24 | 180.04 | **** | **** | **** | **** |
| 27 | 178.22 | 177.58 | 177.22 | 176.90 | 178.70 | 178.60 | 179.20 | 179.90 | **** | **** | **** | **** |
| 28 | 178.07 | 177.45 | 176.90 | 176.88 | 178.88 | 178.70 | 179.38 | 179.95 | **** | **** | **** | **** |
| 29 | 178.10 | 177.17 | 176.82 | 176.60 | 178.40 | 179.18 | 179.70 | 180.10 | **** | **** | **** | **** |
| 30 | 178.25 | 177.35 | 177.08 | 176.28 | ------ | 179.00 | 179.82 | 179.80 | **** | **** | **** | **** |
| 31 | 177.88 | ------ | 177.12 | 176.40 | ------ | 178.97 | ------ | 179.78 | ------ | **** | **** | ------ |
| MIN | 177.88 | 177.15 | 176.55 | 175.70 | 175.65 | 178.30 | 178.60 | 179.23 | **** | **** | **** | **** |
| MAX | 179.97 | 178.42 | 177.92 | 177.06 | 178.88 | 179.35 | 180.08 | 180.10 | **** | **** | **** | **** |
| MEAN | 179.29 | 177.64 | 177.28 | 176.48 | 177.01 | 178.73 | 179.32 | 179.59 | **** | **** | **** | **** |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, MEAN - ****

Table 37. Groundwater level data, WY 1991-1992, National Lead (PH17) observation well.

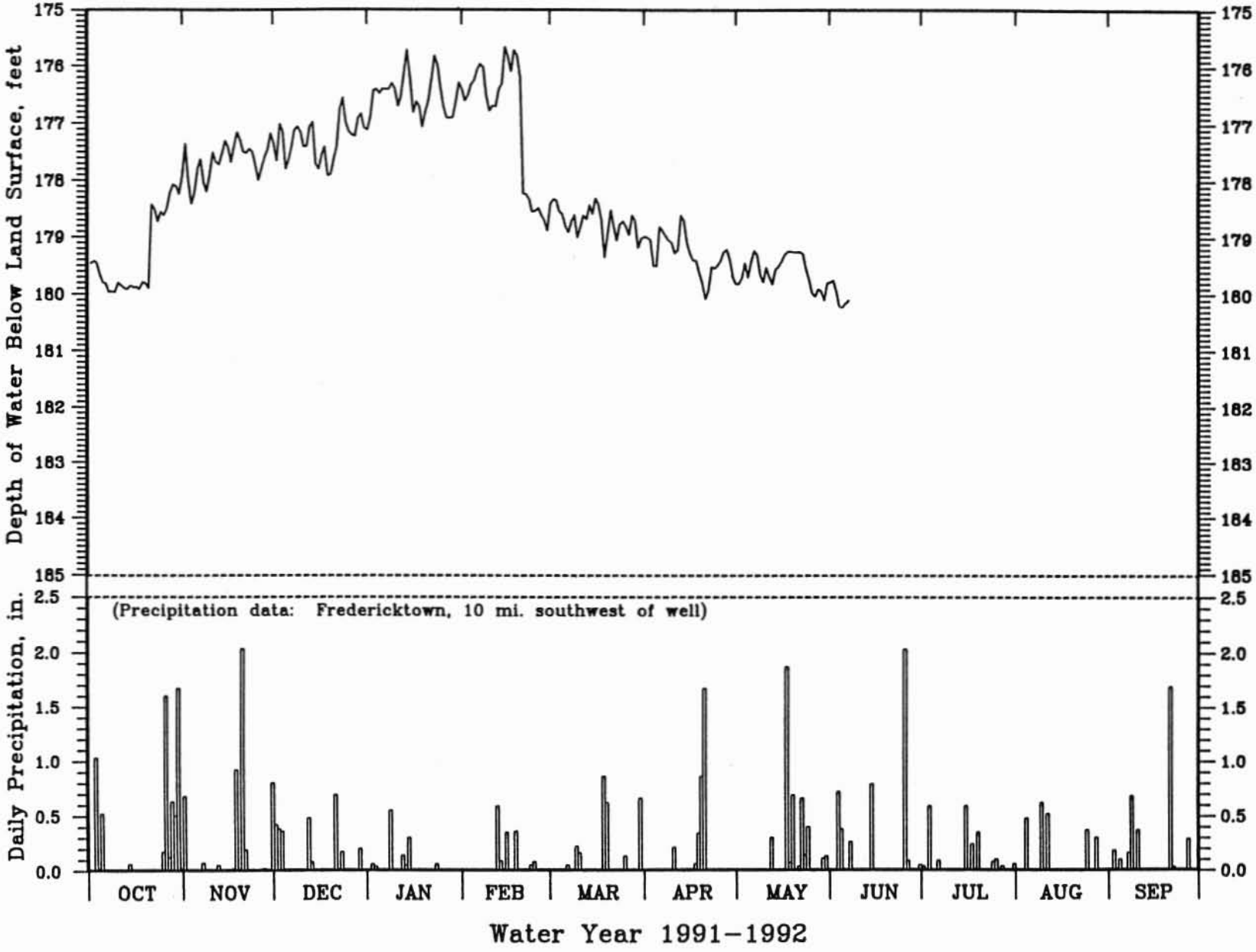



Figure 37. Water-level hydrograph and precipitation, National Lead (PH17) observation well.

MADISON COUNTY: SW1/4 NW1/4 SEC. 20, T. 33 N., R. 7 E. DGLS LOG NUMBER: 5330
37 DEG 32 MIN 10 SEC NORTH LATITUDE, 90 DEG 18 MIN 05 SEC WEST LONGITUDE WELL OWNER: CITY OF FREDERICKTOWN
LAND SURFACE ELEVATION: 857 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.8 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 590 FEET WELL DIAMETER: 8 INCHES (NOTE: **** DENOTES MISSING DATA)
CASING: 187 FEET OF 8 INCH STEEL CASING, PRESSURE GROUTED
FORMATIONS OPEN TO WELL: BONNETERRE FORMATION AND LAMOTTE SANDSTONE
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1990), GRAPHIC RECORDER INSTALLED IN 1958, 34 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 98.38 | 97.70 | 96.52 | 96.07 | 96.20 | 96.51 | 96.68 | 96.14 | 96.53 | 100.23 | 101.21 | 101.76 |
| 2 | 98.51 | 98.02 | 96.22 | 95.90 | **** | 96.50 | 96.64 | 96.24 | 96.47 | 100.27 | 101.20 | 101.72 |
| 3 | 98.51 | 98.09 | 96.14 | 95.87 | **** | 96.47 | 96.43 | 96.35 | 96.37 | 100.32 | 101.07 | 101.80 |
| 4 | 98.56 | 97.95 | 96.19 | 95.95 | **** | 96.46 | 96.50 | 96.25 | 96.33 | 100.39 | 101.17 | 101.88 |
| 5 | 98.29 | 97.80 | 96.16 | 95.95 | **** | 96.47 | 96.73 | 96.30 | 96.40 | 100.30 | 101.25 | 101.79 |
| 6 | 98.10 | 97.77 | 96.10 | 95.96 | **** | 96.51 | 96.62 | 96.45 | 96.46 | 100.35 | 101.28 | 101.81 |
| 7 | 98.12 | 97.77 | 95.88 | 96.02 | **** | 96.65 | 96.56 | 96.50 | 96.65 | 100.39 | 101.29 | 101.84 |
| 8 | 98.24 | 97.77 | 95.83 | 95.95 | **** | 96.75 | 96.54 | 96.30 | 96.70 | 100.44 | 101.28 | 101.99 |
| 9 | 98.24 | 97.68 | 95.87 | 96.04 | **** | 96.51 | 96.51 | 96.28 | 96.69 | 100.47 | 101.35 | 102.00 |
| 10 | 98.30 | 97.31 | 95.89 | 96.17 | **** | 96.66 | 96.47 | 96.40 | 96.70 | 100.50 | 101.38 | 102.05 |
| 11 | 98.48 | 97.30 | 95.87 | 96.15 | **** | 96.75 | 96.55 | 96.42 | 96.25 | 100.54 | 101.38 | 102.14 |
| 12 | 98.38 | 97.29 | 95.60 | 96.00 | **** | 96.75 | 96.81 | 96.38 | 96.74 | 100.50 | 101.42 | 102.15 |
| 13 | 98.28 | 97.16 | 95.65 | 95.85 | **** | 96.84 | 96.75 | 96.48 | 96.71 | 100.49 | 101.46 | 102.07 |
| 14 | 98.38 | 97.07 | 96.00 | 96.05 | **** | 96.85 | 96.65 | 96.52 | 96.72 | 100.53 | 101.49 | 102.08 |
| 15 | 98.29 | 97.15 | 96.10 | 96.17 | **** | 97.00 | 96.57 | 96.59 | 96.77 | 100.54 | 101.54 | 102.15 |
| 16 | 98.15 | 97.30 | 96.00 | 96.15 | **** | 96.92 | 96.58 | 96.68 | 96.80 | 100.56 | 101.54 | 102.13 |
| 17 | 98.18 | 97.17 | 95.95 | 96.17 | **** | 96.75 | 96.65 | 96.77 | 96.79 | 100.69 | 101.53 | 102.05 |
| 18 | 98.11 | 97.03 | 96.15 | 96.20 | **** | 96.60 | 96.56 | 96.82 | 100.37 | 100.80 | 101.53 | 102.01 |
| 19 | 97.91 | 97.08 | 96.19 | 96.19 | 96.20 | 96.88 | 96.51 | 96.81 | 100.39 | 100.81 | 101.53 | 102.07 |
| 20 | 98.00 | 97.16 | 96.10 | 96.18 | 97.05 | 97.07 | 96.45 | 96.80 | 100.43 | 100.80 | 101.54 | 102.01 |
| 21 | 97.99 | 97.26 | 96.07 | 96.14 | 96.92 | 96.90 | 96.60 | 96.77 | 100.56 | 100.83 | 101.58 | 102.00 |
| 22 | 98.02 | 97.10 | 95.85 | 95.95 | 96.75 | 96.87 | 96.75 | 96.70 | 100.59 | 100.82 | 101.61 | 102.15 |
| 23 | 98.03 | 97.02 | 95.65 | 95.90 | 96.62 | 97.01 | 96.68 | 96.60 | 100.46 | 100.84 | 101.62 | 102.35 |
| 24 | 98.04 | 97.00 | 95.93 | 96.20 | 96.59 | 96.97 | 96.65 | 96.55 | 100.42 | 100.92 | 101.68 | 102.25 |
| 25 | 98.07 | 97.03 | 95.99 | 96.25 | 96.57 | 96.86 | 96.60 | 96.45 | 100.45 | 100.90 | 101.69 | 102.18 |
| 26 | 98.05 | 96.81 | 96.00 | 96.44 | 96.45 | 96.85 | 96.58 | 96.43 | 100.57 | 100.84 | 101.69 | 102.15 |
| 27 | 98.07 | 96.64 | 96.04 | 96.43 | 96.40 | 96.95 | 96.55 | 96.47 | 100.68 | 100.85 | 101.71 | 102.27 |
| 28 | 98.04 | 96.51 | 95.90 | 96.48 | 96.30 | 96.90 | 96.42 | 96.45 | 100.60 | 100.93 | 101.71 | 102.35 |
| 29 | 98.10 | 96.33 | 95.86 | 96.45 | 96.52 | 96.63 | 96.22 | 96.41 | 100.38 | 100.95 | 101.72 | 102.40 |
| 30 | 98.20 | 96.35 | 96.00 | 96.30 | ------ | 96.70 | 96.17 | 96.49 | 100.29 | 100.92 | 101.75 | 102.36 |
| 31 | 97.95 | ------ | 96.11 | 96.20 | ------ | 96.72 | ------ | 96.57 | ------ | 101.10 | 101.84 | ------ |
| MIN | 97.91 | 96.33 | 95.60 | 95.85 | **** | 96.46 | 96.17 | 96.14 | 96.25 | 100.23 | 101.07 | 101.72 |
| MAX | 98.56 | 98.09 | 96.52 | 96.48 | **** | 97.07 | 96.81 | 96.82 | 100.68 | 101.10 | 101.84 | 102.40 |
| MEAN | 98.19 | 97.25 | 95.99 | 96.12 | **** | 96.75 | 96.57 | 96.50 | 98.28 | 100.64 | 101.49 | 102.07 |

1992 EXTREMES: MINIMUM - 95.60 (DEC 12), MAXIMUM - 102.40 (SEP 29), MEAN - ****

Table 38. Groundwater level data, WY 1991-1992, Fredericktown observation well.

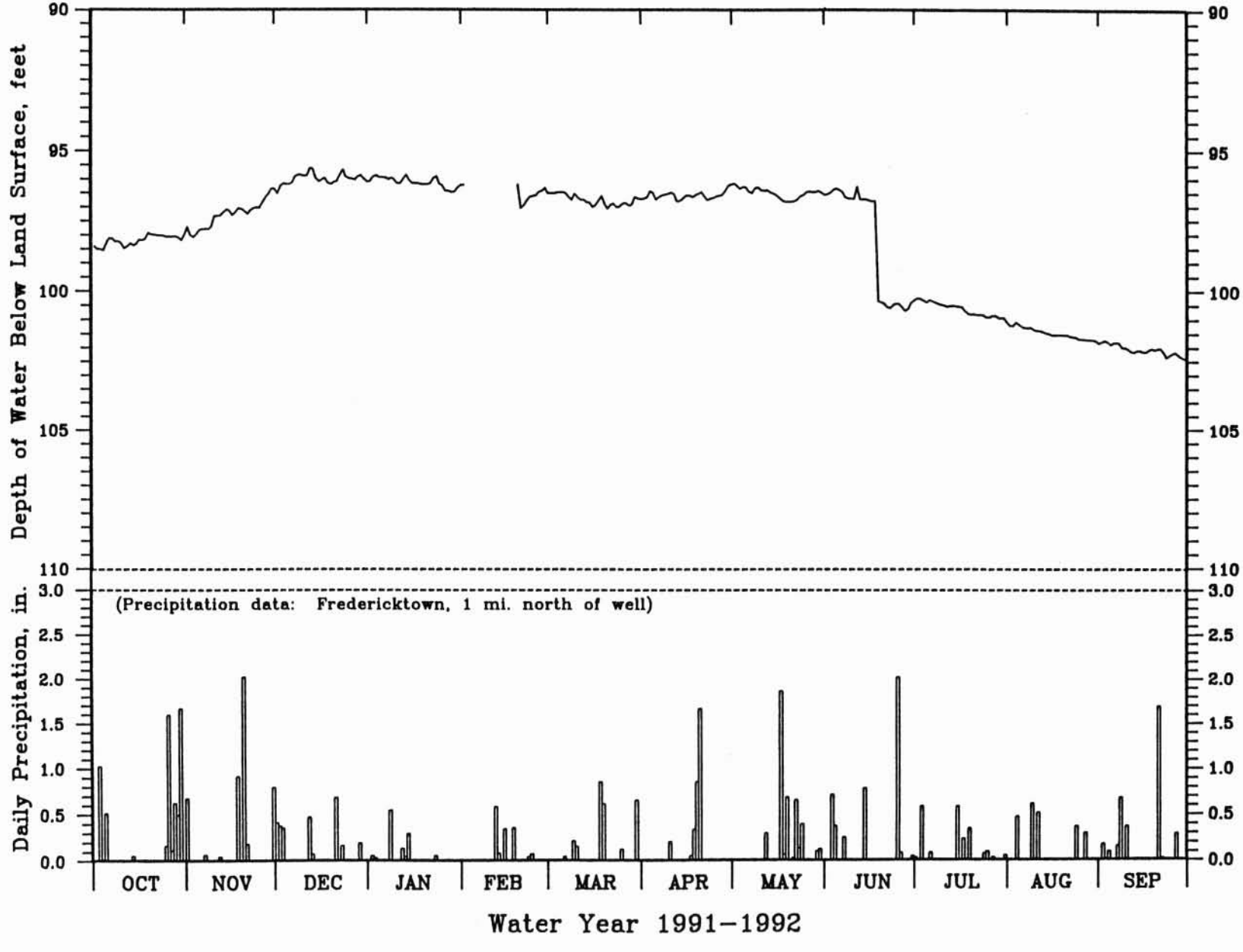



Figure 38. Water-level hydrograph and precipitation, Fredericktown observation well.

CARTER COUNTY: NW1/4 SW1/4 SEC. 6, T. 26 N., R. 1 E. DGLS LOG NUMBER: NONE
36 DEG 56 MIN 54 SEC NORTH LATITUDE, 91 DEG 00 MIN 13 SEC WEST LONGITUDE WELL OWNER: NATIONAL PARK SERVICE-ONSR
LAND SURFACE ELEVATION: 470 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX 0.5 FT ABOVE LAND SURFACE
TOTAL DEPTH: 56 FEET WELL DIAMETER: 6 INCHES
CASING: 20 FEET OF 6 INCH STEEL CASING, NOT PRESSURE GROUTED
FORMATIONS OPEN TO WELL: EMINENCE DOLOMITE (NOTE: **** DENOTES MISSING DATA)
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1980, 12 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18.56 | 16.22 | 8.32 | 8.38 | 10.01 | 9.48 | 10.52 | 5.25 | 7.72 | 9.38 | 10.80 | 14.22 |
| 2 | 18.55 | 15.70 | 6.48 | 8.44 | 10.20 | 9.60 | 10.64 | 5.54 | 7.81 | 9.59 | 10.95 | 14.22 |
| 3 | 18.65 | 15.57 | 6.18 | 8.67 | 10.34 | 9.75 | 10.66 | 5.83 | 7.80 | 9.83 | 11.07 | 14.35 |
| 4 | 18.66 | 15.63 | 6.29 | 8.82 | 10.48 | 9.82 | 10.65 | 5.97 | 7.27 | 10.10 | 11.27 | 14.52 |
| 5 | 18.82 | 15.74 | 6.32 | 8.92 | 10.65 | 9.91 | 11.13 | 6.19 | 7.14 | 10.04 | 11.47 | 14.58 |
| 6 | 18.89 | 15.97 | 6.50 | 9.05 | 10.72 | 10.06 | 11.24 | 6.56 | 7.38 | 10.04 | 10.79 | 14.64 |
| 7 | 18.88 | 16.44 | 6.64 | 9.35 | 10.90 | 10.28 | 11.29 | 6.72 | 7.26 | 10.04 | 11.34 | 14.75 |
| 8 | 18.87 | 16.85 | 6.91 | 8.89 | 11.34 | 10.48 | 11.42 | 6.74 | 7.29 | 10.17 | 11.93 | 14.85 |
| 9 | 18.89 | 17.00 | 7.28 | 8.05 | 11.67 | 10.44 | 11.42 | 6.83 | 7.35 | 10.40 | 12.09 | 14.87 |
| 10 | 18.91 | 17.05 | 7.54 | 8.02 | 11.77 | 10.65 | 9.58 | 7.10 | 5.53 | 10.58 | 12.15 | 15.01 |
| 11 | 18.90 | 17.25 | 7.76 | 7.91 | 11.89 | 10.90 | 8.08 | 7.20 | 5.00 | 10.78 | 11.91 | 15.16 |
| 12 | 18.94 | 17.42 | 7.83 | 7.84 | 11.96 | 10.94 | 8.07 | 7.26 | 5.15 | 10.92 | 11.73 | 15.22 |
| 13 | 19.15 | 17.54 | 7.67 | 7.84 | 11.90 | 11.28 | 8.11 | 7.48 | 5.43 | 11.11 | 11.83 | 15.23 |
| 14 | 19.14 | 17.62 | 7.76 | 7.69 | 11.44 | 11.34 | 8.09 | 7.58 | 5.76 | 11.26 | 12.05 | 15.28 |
| 15 | 19.20 | 17.82 | 7.90 | 7.50 | 9.19 | 11.60 | 8.14 | 7.72 | 5.98 | 11.32 | 12.23 | 15.38 |
| 16 | 19.29 | 18.01 | 8.10 | 7.41 | 8.67 | 11.77 | 8.20 | 7.92 | 6.19 | 11.40 | 12.33 | 15.45 |
| 17 | 19.32 | 18.04 | 8.32 | 7.38 | 8.30 | 11.73 | 8.29 | 8.06 | 6.44 | 10.53 | 12.48 | 15.45 |
| 18 | 19.37 | 16.06 | 8.82 | 7.65 | 8.28 | 11.57 | 8.30 | 7.88 | 6.65 | 9.88 | 12.68 | 15.45 |
| 19 | 19.45 | 13.37 | 9.00 | 7.80 | 8.48 | 9.85 | 8.05 | 7.34 | 6.83 | 9.49 | 12.79 | 15.51 |
| 20 | 19.47 | 10.15 | 9.23 | 7.94 | 8.72 | 9.22 | 3.55 | 7.26 | 7.08 | 9.23 | 12.93 | 15.46 |
| 21 | 19.45 | 9.24 | 8.53 | 8.10 | 8.77 | 9.04 | 2.88 | 7.28 | 7.46 | 8.87 | 13.11 | **** |
| 22 | 19.47 | 8.85 | 7.66 | 8.13 | 8.82 | 9.09 | 2.77 | 6.26 | 7.68 | 8.49 | 13.24 | **** |
| 23 | 19.55 | 8.84 | 7.50 | 8.26 | 8.83 | 9.44 | 2.87 | 6.05 | 7.77 | 8.64 | 13.35 | **** |
| 24 | 19.58 | 8.95 | 7.54 | 8.68 | 8.90 | 9.50 | 3.06 | 6.24 | 7.91 | 9.00 | 13.48 | **** |
| 25 | 19.64 | 9.26 | 7.53 | 8.78 | 8.89 | 9.54 | 3.44 | 6.49 | 8.18 | 9.16 | 13.58 | **** |
| 26 | 19.57 | 9.47 | 7.60 | 9.00 | 8.87 | 9.65 | 3.84 | 6.72 | 8.40 | 9.25 | 13.65 | **** |
| 27 | 19.56 | 9.63 | 7.80 | 9.06 | 8.90 | 9.93 | 4.23 | 7.03 | 8.66 | 9.46 | 13.67 | **** |
| 28 | 19.47 | 9.81 | 7.88 | 9.39 | 8.98 | 10.04 | 4.51 | 7.21 | 8.93 | 9.53 | 13.71 | **** |
| 29 | 19.10 | 9.96 | 8.02 | 9.50 | 9.36 | 9.98 | 4.77 | 7.31 | 9.08 | 9.77 | 13.89 | **** |
| 30 | 18.04 | 9.51 | 8.15 | 9.51 | ------ | 10.19 | 4.97 | 7.46 | 9.19 | 10.06 | 14.01 | **** |
| 31 | 17.00 | ------ | 8.29 | 9.72 | ------ | 10.38 | ------ | 7.57 | ------ | 10.42 | 14.14 | ------ |
| MIN | 17.00 | 8.84 | 6.18 | 7.38 | 8.28 | 9.04 | 2.77 | 5.25 | 5.00 | 8.49 | 10.79 | 14.22 |
| MAX | 19.64 | 18.04 | 9.23 | 9.72 | 11.96 | 11.77 | 11.42 | 8.06 | 9.19 | 11.40 | 14.14 | 15.51 |
| MEAN | 19.04 | 13.97 | 7.66 | 8.44 | 9.90 | 10.24 | 7.43 | 6.90 | 7.21 | 9.96 | 12.47 | **** |

1992 EXTREMES: MINIMUM - 2.77 (APR 22), MAXIMUM - 19.64 (OCT 25), AVERAGE - ****

Table 39. Groundwater level data, WY 1991-1992, Big Spring observation well.

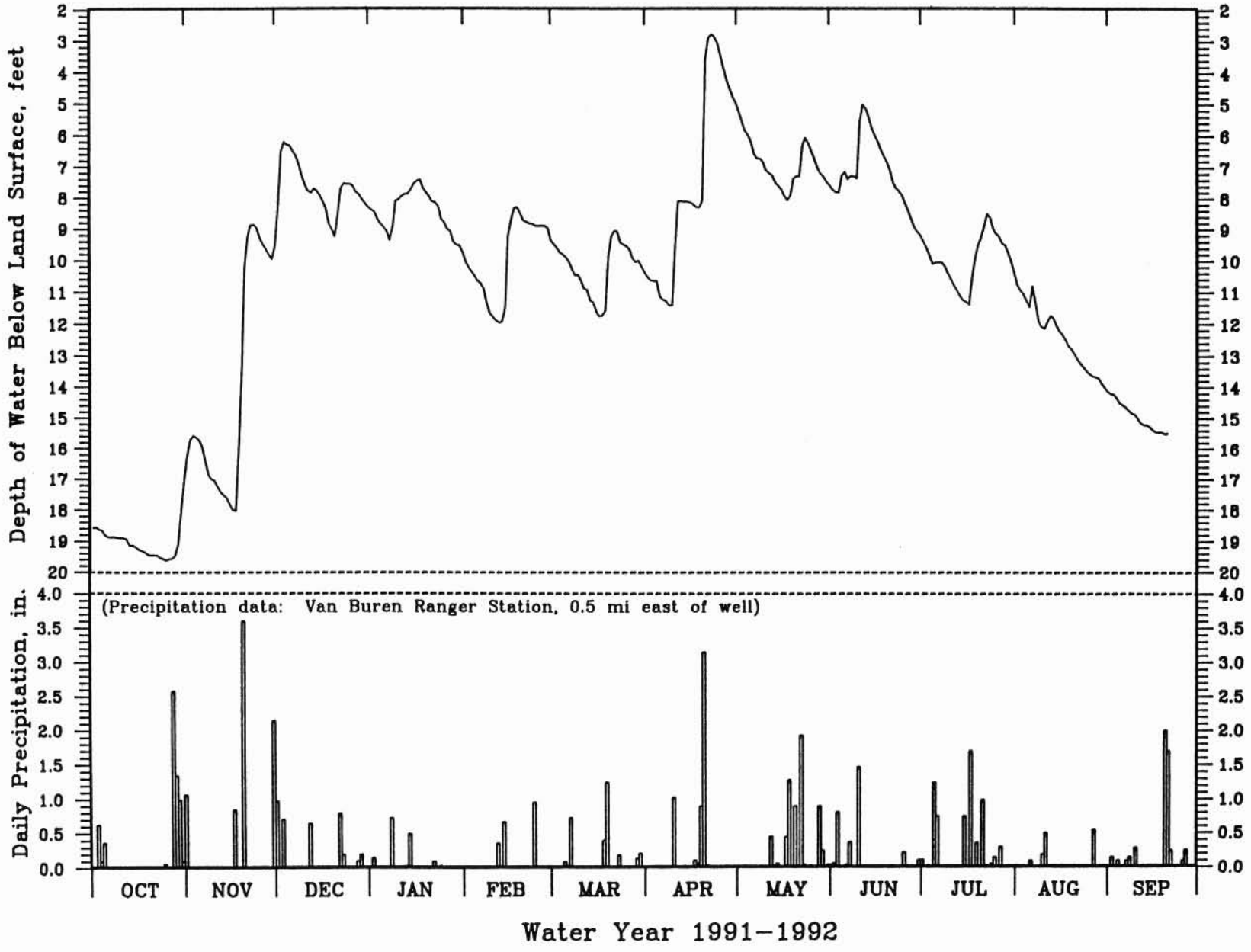



Figure 39. Water-level hydrograph and precipitation, Big Spring observation well.

RIPLEY COUNTY: SE1/4 SE1/4 SEC. 3, T. 22 N., R. 4 E. DGLS LOG NUMBER: NONE
36 DEG 34 MIN 41 SEC NORTH LATITUDE, 90 DEG 36 MIN 43 SEC WEST LONGITUDE WELL OWNER: DGLS
LAND SURFACE ELEVATION: 300 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 8.1 FEET ABOVE LAND SURFACE (NOTE: **** DENOTES MISSING DATA)
TOTAL DEPTH: 65 FEET WELL DIAMETER: 8 INCHES
CASING: 44 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED, 4-INCH STEEL PRODUCTION CASING FROM 44 TO 61 FEET
FORMATIONS OPEN TO WELL: CLAY, SILT, SAND AND GRAVEL TO 61 FEET, DOLOMITE 61 TO 65 FEET
SCREEN INFORMATION: WELL CONTAINS 4 FEET OF 4 INCH WELL SCREEN
TYPE OF INSTALLATION: STEVENS A-35 GRAPHIC RECORDER INSTALLED IN 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18.74 | 17.30 | 15.35 | 13.61 | **** | **** | **** | **** | **** | **** | 18.62 | 17.42 |
| 2 | 18.74 | 17.25 | 14.98 | **** | **** | **** | **** | **** | **** | **** | 18.57 | 17.42 |
| 3 | 18.75 | 17.21 | 14.53 | **** | **** | **** | **** | **** | **** | **** | 18.52 | 17.37 |
| 4 | 18.75 | 17.20 | 14.50 | **** | **** | **** | **** | **** | **** | **** | 18.41 | 17.33 |
| 5 | 18.74 | 17.20 | 14.47 | **** | **** | **** | **** | **** | **** | **** | 18.35 | 17.32 |
| 6 | 18.74 | 17.20 | 14.44 | **** | **** | **** | **** | **** | **** | **** | 18.28 | 17.28 |
| 7 | 18.74 | 17.22 | 14.40 | 13.61 | **** | **** | **** | **** | **** | **** | 18.26 | 17.26 |
| 8 | 18.73 | 17.26 | 14.40 | 13.50 | **** | **** | **** | **** | **** | **** | 18.23 | 17.24 |
| 9 | 18.74 | 17.26 | 14.40 | 13.40 | **** | **** | **** | **** | **** | **** | 18.17 | 17.23 |
| 10 | 18.74 | 17.25 | 14.38 | 13.40 | **** | **** | **** | **** | **** | 15.25 | 18.15 | 17.20 |
| 11 | 18.74 | 17.29 | 14.37 | 13.35 | **** | **** | **** | **** | **** | **** | 18.12 | 17.17 |
| 12 | 18.75 | 17.32 | 14.24 | **** | **** | **** | **** | **** | **** | **** | 18.02 | 17.15 |
| 13 | 18.77 | 17.31 | 14.15 | **** | **** | **** | **** | **** | **** | **** | 17.95 | 17.13 |
| 14 | 18.76 | 17.31 | 14.17 | **** | **** | **** | **** | **** | **** | **** | 17.89 | 17.10 |
| 15 | 18.78 | 17.34 | 14.13 | **** | **** | **** | **** | **** | **** | **** | 17.87 | 17.05 |
| 16 | 18.80 | 17.36 | 14.12 | **** | **** | **** | **** | **** | **** | **** | 17.83 | 17.03 |
| 17 | 18.81 | 17.32 | 14.13 | **** | **** | **** | **** | **** | **** | **** | 17.77 | 17.03 |
| 18 | 18.83 | 17.30 | 14.21 | **** | **** | **** | **** | **** | **** | **** | 17.75 | 17.00 |
| 19 | 18.84 | 17.01 | 14.26 | **** | **** | **** | **** | **** | **** | **** | 17.73 | 16.90 |
| 20 | 18.85 | 16.16 | 14.20 | **** | **** | 13.22 | **** | **** | **** | **** | 17.68 | 16.90 |
| 21 | 18.84 | 15.73 | 14.01 | **** | **** | 13.10 | **** | **** | **** | **** | 17.63 | 16.95 |
| 22 | 18.85 | 15.58 | 13.85 | **** | **** | **** | **** | **** | **** | **** | 17.60 | 16.95 |
| 23 | 18.86 | 15.61 | 13.76 | **** | **** | **** | **** | **** | **** | **** | 17.58 | 17.01 |
| 24 | 18.87 | 15.64 | 13.75 | **** | **** | **** | **** | **** | **** | **** | 17.57 | 17.01 |
| 25 | 18.87 | 15.66 | 13.74 | **** | **** | **** | **** | **** | **** | **** | 17.53 | 17.00 |
| 26 | 18.83 | 15.64 | 13.71 | **** | **** | **** | **** | **** | **** | **** | 17.49 | 16.97 |
| 27 | 18.75 | 15.63 | 13.70 | **** | **** | **** | **** | **** | **** | **** | 17.53 | 17.00 |
| 28 | 18.50 | 15.63 | 13.66 | **** | **** | **** | **** | **** | **** | **** | 17.52 | 17.05 |
| 29 | 18.31 | 15.60 | 13.62 | **** | **** | **** | **** | **** | **** | **** | 17.50 | 17.01 |
| 30 | 17.91 | 15.53 | 13.62 | **** | ------ | **** | **** | **** | **** | 18.80 | 17.47 | 17.00 |
| 31 | 17.45 | ------ | 13.62 | **** | ------ | **** | ------ | **** | ------ | 18.73 | 17.44 | ------ |
| MIN | 17.45 | 15.53 | 13.62 | **** | **** | **** | **** | **** | **** | **** | 17.44 | 16.90 |
| MAX | 18.87 | 17.36 | 15.35 | **** | **** | **** | **** | **** | **** | **** | 18.62 | 17.42 |
| MEAN | 18.69 | 16.68 | 14.16 | **** | **** | **** | **** | **** | **** | **** | 17.90 | 17.12 |

1992 EXTREMES: MINIMUM - ****, MAXIMUM - ****, AVERAGE - ****

Table 40. Groundwater level data, WY 1991-1992, Naylor observation well.

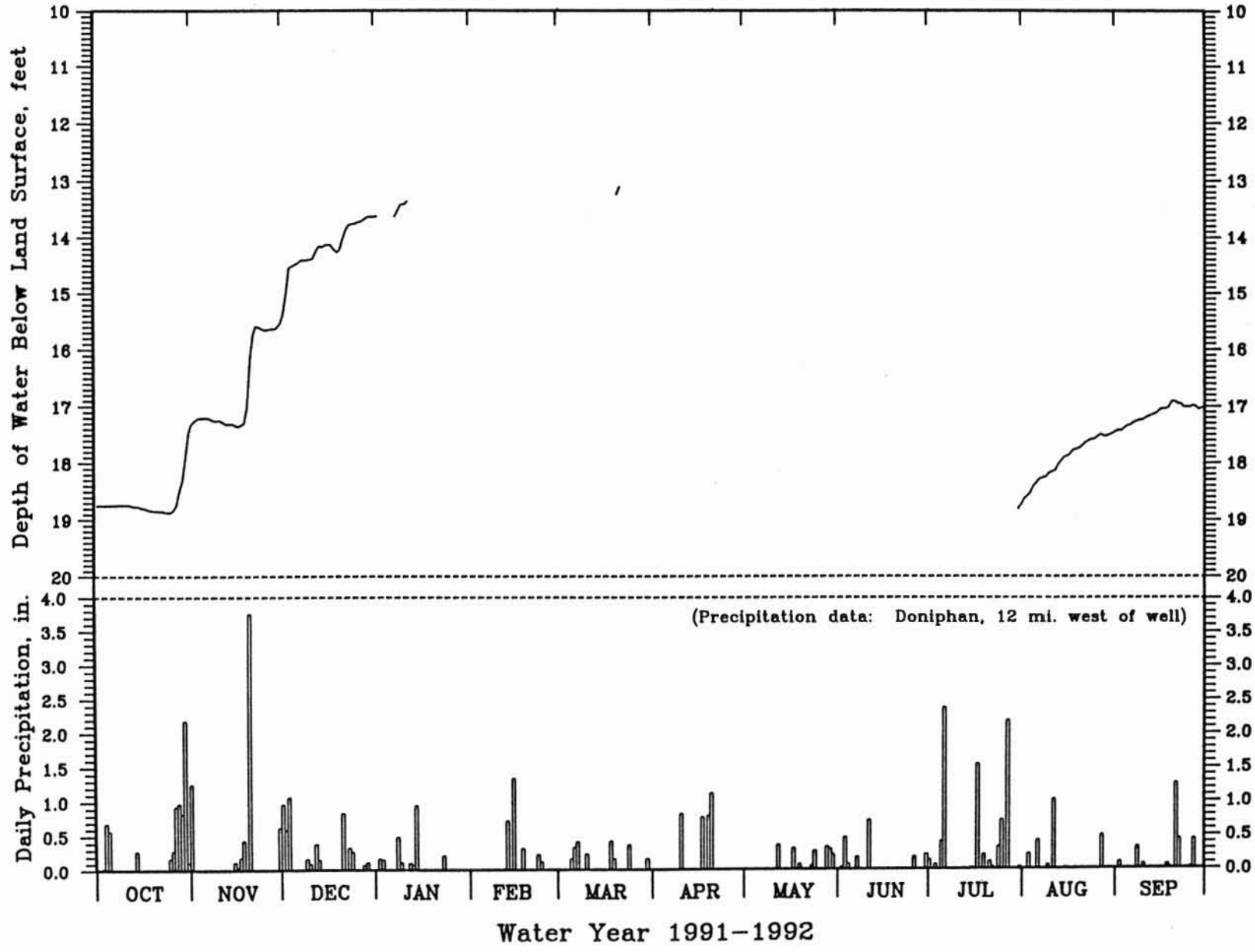



Figure 40. Water-level hydrograph and precipitation, Naylor observation well.

BOLLINGER COUNTY: SW1/4 SE1/4 SEC. 32, T. 28 N., R. 9 E. DGLS LOG NUMBER: NONE
37 DEG 02 MIN 45 SEC NORTH LATITUDE, 90 DEG 04 MIN 29 SEC WEST LONGITUDE WELL OWNER: MO. DEPT. OF CONSERVATION
LAND SURFACE ELEVATION: 344 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX 2.7 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 115 FEET WELL DIAMETER: 8 INCHES
CASING: 60 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED, 4-INCH STEEL PRODUCTION CASING FROM 60 TO 70.5 FEET
WELL PRODUCES FROM THE MISSISSIPPI EMBAYMENT ALLUVIUM
SCREEN INFORMATION: WELL CONTAINS 4.5 FEET OF 4 INCH WELL SCREEN
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1980, 12 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12.02 | 10.34 | 7.60 | 6.69 | 6.61 | 5.96 | 6.06 | 6.28 | 8.00 | 11.96 | 11.93 | 11.73 |
| 2 | 12.01 | 10.40 | 6.94 | 6.48 | 6.64 | 6.00 | 6.08 | 6.39 | 7.99 | 11.93 | 11.93 | 11.69 |
| 3 | 12.01 | 10.38 | 6.69 | 6.33 | 6.62 | 6.04 | 5.98 | 6.56 | 7.87 | 11.88 | 11.93 | 11.72 |
| 4 | 11.98 | 10.32 | 6.76 | 6.31 | 6.62 | 6.07 | 5.97 | 6.58 | 7.91 | 11.89 | 12.04 | 11.73 |
| 5 | 12.05 | 10.21 | 6.58 | 6.27 | 6.63 | 6.07 | 6.29 | 6.76 | 8.32 | 11.80 | 12.25 | 11.71 |
| 6 | 12.03 | 10.19 | 6.53 | 6.28 | 6.60 | 6.09 | 6.29 | 7.28 | 8.54 | 11.69 | 11.99 | 11.66 |
| 7 | 11.94 | 10.29 | 6.52 | 6.33 | 6.68 | 6.12 | 6.29 | 7.46 | 8.74 | 11.67 | 11.90 | 11.59 |
| 8 | 11.86 | 10.34 | 6.62 | 6.19 | 6.86 | 6.13 | 6.36 | 7.39 | 8.83 | 11.86 | 12.00 | 11.54 |
| 9 | 11.84 | 10.25 | 6.77 | 6.07 | 7.01 | 5.94 | 6.38 | 7.26 | 8.81 | 12.14 | 12.03 | 11.48 |
| 10 | 11.82 | 10.17 | 6.83 | 6.10 | 6.98 | 6.00 | 6.40 | 7.32 | 8.68 | 12.40 | 12.01 | 11.56 |
| 11 | 11.79 | 10.20 | 6.80 | 6.06 | 7.01 | 6.11 | 6.43 | 7.31 | 8.52 | 12.61 | 12.22 | 11.61 |
| 12 | 11.90 | 10.19 | 6.62 | 5.95 | 6.93 | 6.06 | 6.70 | 7.25 | 8.51 | 12.62 | 12.52 | 11.59 |
| 13 | 12.02 | 10.10 | 6.57 | 5.81 | 6.81 | 6.21 | 6.72 | 7.39 | 8.72 | 12.67 | 12.52 | 11.55 |
| 14 | 11.97 | 10.07 | 6.77 | 5.90 | 6.60 | 6.19 | 6.62 | 7.45 | 8.78 | 12.87 | 12.23 | 11.54 |
| 15 | 11.98 | 10.10 | 6.79 | 5.97 | 6.08 | 6.37 | 6.60 | 7.51 | 8.66 | 12.85 | 12.11 | 11.48 |
| 16 | 12.01 | 10.10 | 6.72 | 6.00 | 6.02 | 6.41 | 6.61 | 7.63 | 8.66 | 12.60 | 12.23 | 11.39 |
| 17 | 11.98 | 9.90 | 6.71 | 5.99 | 5.76 | 6.30 | 6.61 | 7.71 | 8.71 | 12.37 | 12.31 | 11.33 |
| 18 | 12.02 | 9.69 | 6.96 | 6.21 | 5.65 | 6.15 | 6.53 | 7.86 | 9.02 | 12.24 | 12.46 | 11.28 |
| 19 | 12.16 | 9.53 | 7.05 | 6.23 | 5.78 | 6.18 | 6.37 | 7.94 | 9.87 | 12.28 | 12.41 | 11.33 |
| 20 | 12.06 | 8.62 | 6.97 | 6.17 | 5.86 | 6.21 | 5.95 | 7.96 | 10.53 | 12.31 | 12.30 | 11.20 |
| 21 | 11.99 | 8.12 | 6.91 | 6.18 | 5.83 | 6.08 | 5.61 | 8.05 | 11.05 | 12.32 | 12.30 | 11.00 |
| 22 | 11.97 | 7.85 | 6.67 | 6.05 | 5.79 | 5.97 | 5.61 | 7.99 | 11.32 | 12.39 | 12.24 | 10.99 |
| 23 | 11.96 | 7.82 | 6.50 | 6.03 | 5.69 | 6.14 | 5.60 | 7.85 | 11.49 | 12.45 | 12.16 | 11.01 |
| 24 | 11.93 | 7.89 | 6.67 | 6.31 | 5.62 | 6.19 | 5.65 | 7.81 | 11.64 | 12.49 | 12.23 | 10.97 |
| 25 | 11.86 | 8.03 | 6.64 | 6.28 | 5.56 | 6.14 | 5.79 | 7.75 | 11.55 | 12.70 | 12.24 | 10.94 |
| 26 | 11.76 | 8.03 | 6.61 | 6.47 | 5.55 | 6.12 | 5.93 | 7.76 | 11.53 | 12.68 | 12.11 | 10.92 |
| 27 | 11.67 | 8.03 | 6.64 | 6.42 | 5.56 | 6.31 | 6.06 | 7.84 | 11.60 | 12.16 | 11.97 | 11.00 |
| 28 | 11.51 | 8.05 | 6.53 | 6.50 | 5.59 | 6.33 | 6.12 | 7.85 | 11.71 | 11.92 | 11.86 | 11.04 |
| 29 | 11.36 | 8.01 | 6.55 | 6.52 | 5.88 | 6.19 | 6.10 | 7.76 | 11.62 | 11.81 | 11.82 | 11.08 |
| 30 | 10.95 | 7.91 | 6.67 | 6.39 | ------ | 6.16 | 6.16 | 7.86 | 11.87 | 11.79 | 11.79 | 11.07 |
| 31 | 10.56 | ------ | 6.75 | 6.45 | ------ | 6.12 | ------ | 7.99 | ------ | 11.84 | 11.76 | ------ |
| MIN | 10.56 | 7.82 | 6.50 | 5.81 | 5.55 | 5.94 | 5.60 | 6.28 | 7.87 | 11.67 | 11.76 | 10.92 |
| MAX | 12.16 | 10.40 | 7.60 | 6.69 | 7.01 | 6.41 | 6.72 | 8.05 | 11.87 | 12.87 | 12.52 | 11.73 |
| MEAN | 11.84 | 9.37 | 6.74 | 6.22 | 6.24 | 6.14 | 6.20 | 7.48 | 9.64 | 12.23 | 12.12 | 11.36 |

1992 EXTREMES: MINIMUM - 5.55 (FEB 26), MAXIMUM - 12.87 (JUL 14), AVERAGE - 8.81

Table 41. Groundwater level data, WY 1991-1992, Duck Creek observation well.

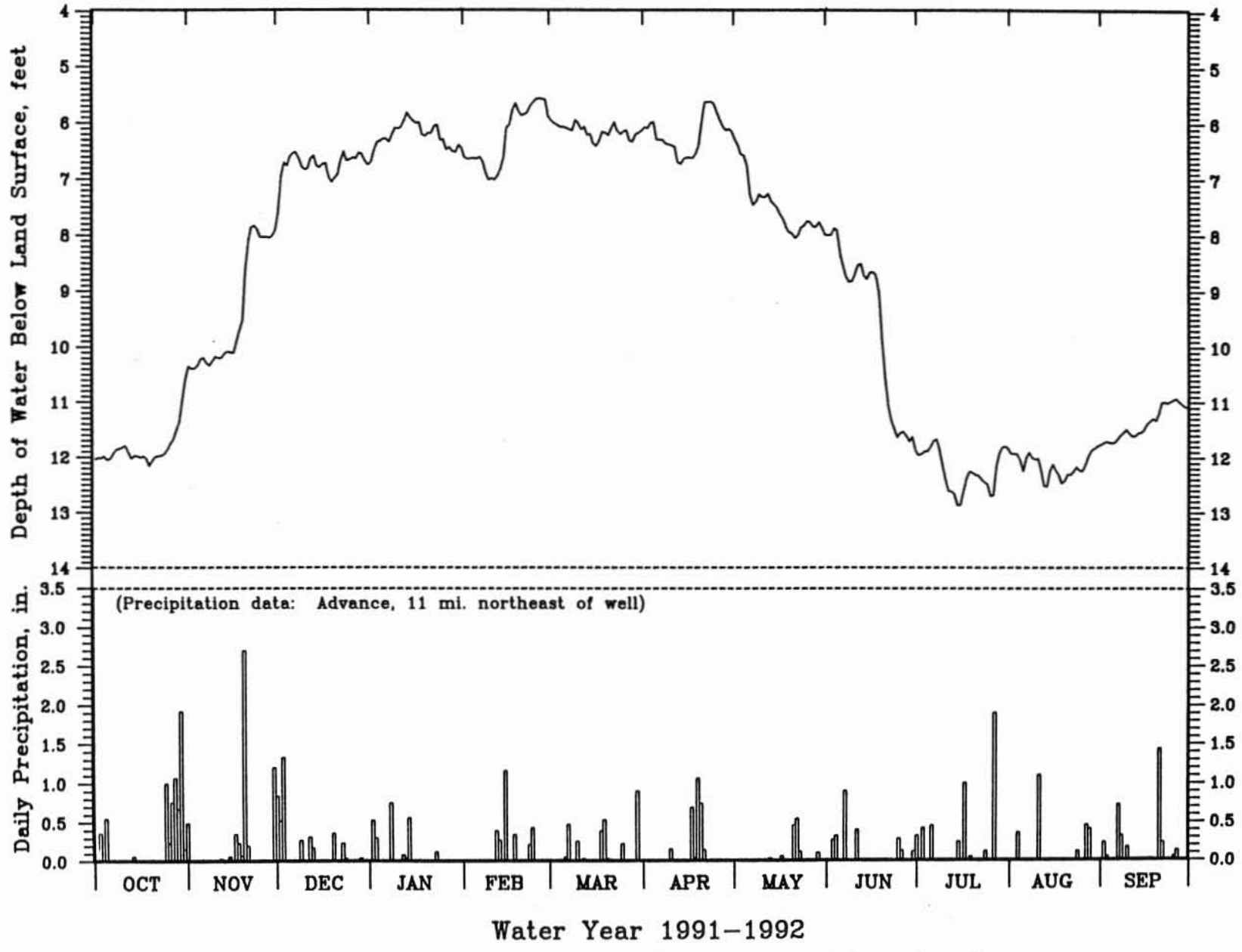



Figure 41. Water-level hydrograph and precipitation, Duck Creek observation well.

CAPE GIRARDEAU COUNTY: NW1/4 SE1/4 SEC. 8, T. 29 N., R. 12 E. DGLS LOG NUMBER: NONE
37 DEG 11 MIN 25 SEC NORTH LATITUDE, 89 DEG 44 MIN 53 SEC WEST LONGITUDE WELL OWNER: MO. HWY. DEPT
LAND SURFACE ELEVATION: 335 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX 1.8 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 75 FEET WELL DIAMETER: 8 INCHES
CASING: 60 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED, 4-INCH PRODUCTION CASING FROM 60 TO 70.5 FEET
WELL PRODUCES FROM THE MISSISSIPPI EMBAYMENT ALLUVIUM
SCREEN INFORMATION: WELL CONTAINS 4.5 FEET OF 4 INCH WELL SCREEN
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1980). GRAPHIC RECORDER INSTALLED IN 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22.29 | 20.54 | 17.99 | 18.42 | 19.25 | 18.21 | 17.74 | 17.66 | 19.98 | 22.27 | 20.27 | 21.86 |
| 2 | 22.27 | 20.55 | 17.19 | 18.29 | 19.32 | 18.31 | 17.79 | 17.74 | 20.02 | 21.83 | 20.20 | 21.82 |
| 3 | 22.27 | 20.61 | 16.53 | 17.75 | 19.35 | 18.41 | 17.79 | 17.86 | 20.01 | 21.73 | 20.77 | 21.88 |
| 4 | 22.27 | 20.70 | 16.57 | 17.65 | 19.38 | 18.51 | 17.81 | 17.89 | 20.00 | 21.64 | 20.26 | 21.95 |
| 5 | 22.34 | 20.74 | 16.93 | 17.78 | 19.44 | 18.60 | 18.07 | 17.96 | 20.07 | 21.50 | 20.13 | 21.96 |
| 6 | 22.40 | 20.82 | 17.20 | 17.93 | 19.46 | 18.70 | 18.15 | 18.13 | 20.17 | 21.44 | 20.14 | 21.96 |
| 7 | 22.34 | 20.97 | 17.34 | 18.13 | 19.54 | 18.84 | 18.21 | 18.19 | 20.09 | 22.04 | 20.17 | 21.90 |
| 8 | 22.24 | 21.11 | 17.53 | 18.08 | 19.70 | 18.97 | 18.33 | 18.15 | 19.98 | 22.62 | 20.23 | 21.80 |
| 9 | 22.23 | 21.09 | 17.78 | 17.56 | 19.84 | 18.92 | 18.42 | 18.18 | 19.99 | 22.80 | 20.36 | 21.70 |
| 10 | 22.21 | 21.06 | 17.95 | 17.53 | 19.85 | 18.93 | 18.53 | 18.30 | 20.07 | 23.20 | 20.40 | 21.74 |
| 11 | 22.15 | 21.14 | 18.08 | 17.67 | 19.89 | 19.05 | 18.60 | 18.39 | 20.14 | 23.47 | 20.38 | 21.77 |
| 12 | 22.19 | 21.22 | 18.07 | 17.77 | 19.87 | 18.98 | 18.82 | 18.42 | 20.21 | 23.95 | 20.39 | 21.70 |
| 13 | 22.27 | 21.23 | 17.84 | 17.80 | 19.76 | 19.05 | 18.90 | 18.57 | 20.26 | 24.61 | 20.41 | 21.57 |
| 14 | 22.22 | 21.26 | 17.81 | 17.70 | 19.50 | 18.97 | 18.88 | 18.68 | 20.37 | 24.52 | 20.48 | 21.48 |
| 15 | 22.25 | 21.32 | 17.94 | 17.63 | 18.33 | 19.01 | 18.93 | 18.79 | 20.44 | 23.90 | 20.57 | 21.47 |
| 16 | 22.32 | 21.40 | 18.02 | 17.79 | 17.85 | 19.00 | 18.98 | 19.00 | 20.77 | 23.47 | 20.66 | 21.46 |
| 17 | 22.30 | 21.38 | 18.07 | 17.90 | 17.77 | 18.89 | 18.97 | 19.16 | 21.08 | 22.71 | 20.75 | 21.46 |
| 18 | 22.31 | 21.33 | 18.30 | 18.18 | 17.68 | 18.75 | 18.90 | 19.30 | 21.46 | 22.19 | 20.89 | 21.50 |
| 19 | 22.38 | 21.23 | 18.48 | 18.34 | 17.70 | 18.57 | 18.74 | 19.40 | 21.79 | 21.83 | 21.00 | 21.60 |
| 20 | 22.34 | 19.31 | 18.49 | 18.42 | 17.87 | 18.50 | 18.18 | 19.51 | 21.98 | 21.90 | 21.20 | 21.45 |
| 21 | 22.27 | 17.81 | 18.41 | 18.53 | 17.97 | 18.44 | 17.37 | 19.61 | 22.61 | 21.47 | 22.08 | 21.06 |
| 22 | 22.27 | 17.39 | 18.15 | 18.55 | 18.06 | 18.32 | 17.21 | 19.67 | 22.83 | 21.25 | 22.36 | 20.87 |
| 23 | 22.29 | 17.54 | 17.90 | 18.52 | 18.01 | 18.40 | 17.25 | 19.65 | 22.97 | 22.36 | 21.99 | 20.83 |
| 24 | 22.29 | 17.87 | 17.87 | 18.69 | 17.63 | 18.38 | 17.29 | 19.56 | 23.15 | 21.72 | 22.02 | 20.74 |
| 25 | 22.29 | 18.25 | 17.90 | 18.74 | 17.47 | 18.27 | 17.35 | 19.53 | 23.27 | 21.44 | 22.00 | 20.67 |
| 26 | 22.26 | 18.51 | 17.99 | 18.92 | 17.54 | 18.26 | 17.42 | 19.56 | 23.52 | 21.23 | 21.90 | 20.65 |
| 27 | 22.21 | 18.70 | 18.11 | 18.94 | 17.68 | 18.38 | 17.49 | 19.66 | 23.79 | 20.84 | 21.77 | 20.74 |
| 28 | 22.09 | 18.89 | 18.12 | 19.03 | 17.82 | 18.46 | 17.54 | 19.70 | 23.68 | 20.55 | 21.74 | 20.79 |
| 29 | 22.03 | 18.99 | 18.15 | 19.08 | 18.06 | 18.39 | 17.53 | 19.72 | 23.64 | 20.44 | 21.76 | 20.87 |
| 30 | 21.67 | 18.71 | 18.26 | 19.04 | ------ | 18.14 | 17.57 | 19.81 | 23.39 | 20.31 | 21.79 | 20.88 |
| 31 | 20.91 | ------ | 18.37 | 19.10 | ------ | 17.82 | ------ | 19.93 | ------ | 20.28 | 21.84 | ------ |
| MIN | 20.91 | 17.39 | 16.53 | 17.53 | 17.47 | 17.82 | 17.21 | 17.66 | 19.98 | 20.28 | 20.13 | 20.65 |
| MAX | 22.40 | 21.40 | 18.49 | 19.10 | 19.89 | 19.05 | 18.98 | 19.93 | 23.79 | 24.61 | 22.36 | 21.96 |
| MEAN | 22.20 | 20.06 | 17.85 | 18.24 | 18.68 | 18.59 | 18.09 | 18.89 | 21.39 | 22.11 | 21.00 | 21.40 |

1992 EXTREMES: MINIMUM - 16.53 (DEC 3), MAXIMUM - 24.61 (JUL 13), AVERAGE - 19.88

Table 42. Groundwater level data, WY 1991-1992, Delta observation well.

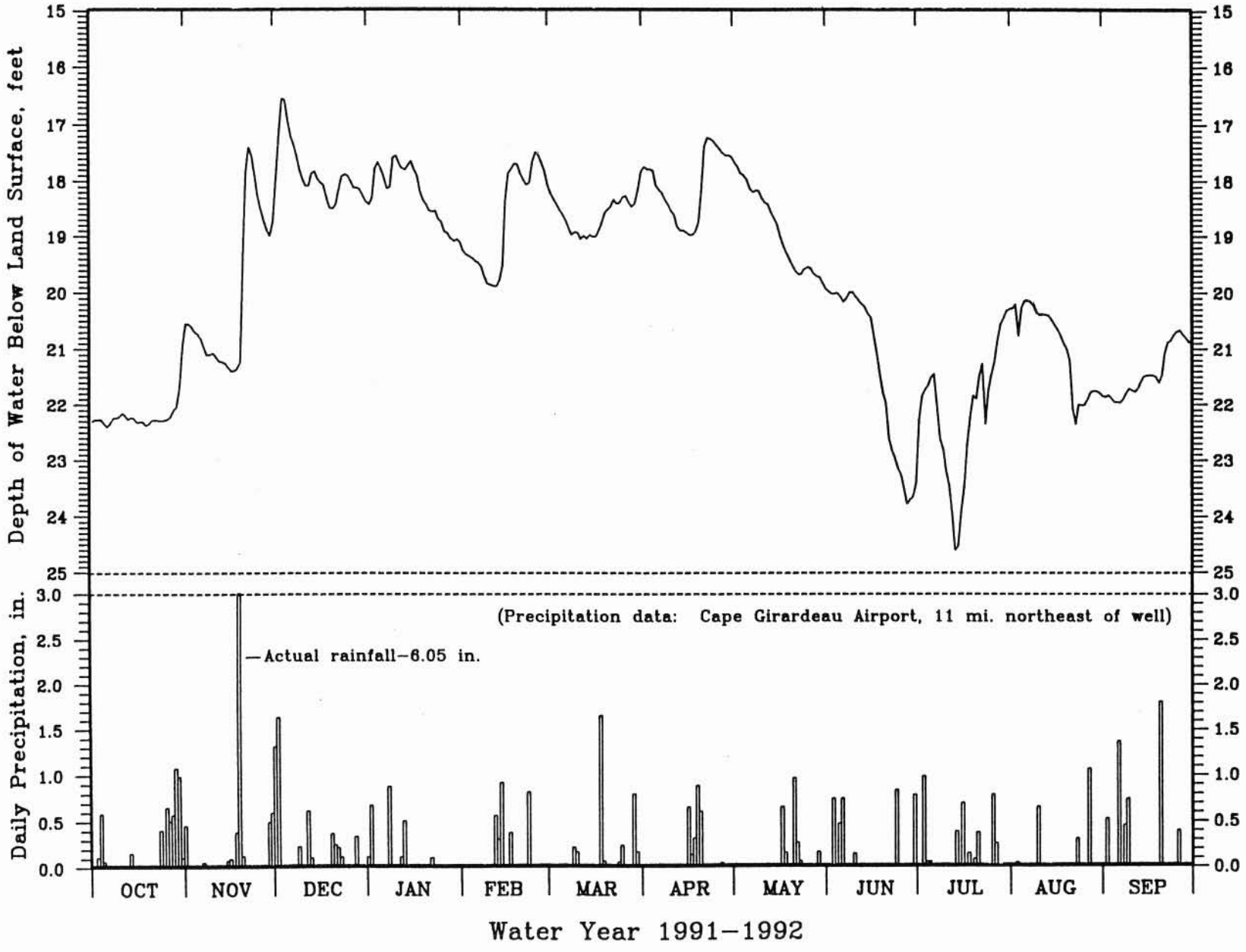



Figure 42. Water-level hydrograph and precipitation, Delta observation well.

SCOTT COUNTY: NW1/4 NW1/4 SEC. 21, T. 26 N., R. 14 E. DGLS LOG NUMBER: 15041
36 DEG 53 MIN 19 SEC NORTH LATITUDE, 89 DEG 33 MIN 10 SEC WEST LONGITUDE WELL OWNER: MO. HWY. DEPT.
LAND SURFACE ELEVATION: 310 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.8 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 145 FEET WELL DIAMETER: 8 INCHES
CASING: 57 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED, 4-INCH PRODUCTION CASING FROM 56 TO 140.5 FT
WELL PRODUCES FROM THE MISSISSIPPI EMBAYMENT ALLUVIUM
SCREEN INFORMATION: WELL CONTAINS 4.5 FEET OF 4 INCH WELL SCREEN
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1980). GRAPHIC RECORDER INSTALLED IN 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.94 | 9.10 | 8.46 | 8.44 | 8.75 | 8.53 | 8.70 | 8.79 | 9.48 | 9.63 | 9.45 | 9.94 |
| 2 | 9.96 | 9.04 | 8.15 | 8.40 | 8.76 | 8.56 | 8.73 | 8.84 | 9.49 | 9.66 | 9.48 | 9.95 |
| 3 | 9.97 | 9.02 | 7.87 | 8.35 | 8.78 | 8.59 | 8.75 | 8.88 | 9.44 | 9.72 | 9.51 | 9.96 |
| 4 | 10.32 | 9.04 | 7.81 | 8.39 | 8.80 | 8.62 | 8.77 | 8.90 | 9.43 | 9.74 | 9.55 | 9.99 |
| 5 | 9.97 | 9.06 | 7.80 | 8.42 | 8.82 | 8.64 | 8.83 | 8.94 | 9.47 | 9.69 | 9.59 | 10.01 |
| 6 | 10.32 | 9.09 | 7.87 | 8.46 | 8.83 | 8.66 | 8.85 | 8.98 | 9.48 | 9.70 | 9.62 | 10.01 |
| 7 | 10.01 | 9.15 | 7.95 | 8.49 | 8.86 | 8.71 | 8.87 | 9.01 | 9.33 | 9.72 | 9.66 | 9.86 |
| 8 | 10.02 | 9.20 | 8.04 | 8.35 | 8.89 | 8.74 | 8.89 | 9.04 | 9.31 | 9.76 | 9.69 | 9.81 |
| 9 | 10.03 | 9.22 | 8.11 | 8.22 | 8.92 | 8.71 | 8.91 | 9.07 | 9.35 | 9.81 | 9.71 | 9.81 |
| 10 | 10.05 | 9.25 | 8.17 | 8.23 | 8.93 | 8.67 | 8.92 | 9.10 | 9.39 | 9.85 | 9.73 | 9.85 |
| 11 | 10.06 | 9.29 | 8.22 | 8.26 | 8.95 | 8.70 | 8.94 | 9.13 | 9.41 | 9.87 | 9.75 | 9.89 |
| 12 | 10.08 | 9.31 | 8.22 | 8.28 | 8.93 | 8.74 | 8.97 | 9.15 | 9.45 | 9.89 | 9.78 | 9.94 |
| 13 | 10.10 | 9.33 | 7.85 | 8.29 | 8.80 | 8.77 | 8.99 | 9.18 | 9.48 | 9.91 | 9.81 | 9.98 |
| 14 | 10.10 | 9.35 | 7.83 | 8.22 | 8.66 | 8.79 | 9.01 | 9.20 | 9.50 | 9.92 | 9.84 | 10.01 |
| 15 | 10.11 | 9.37 | 7.87 | 8.22 | 8.43 | 8.83 | 9.03 | 9.22 | 9.53 | 9.86 | 9.87 | 10.04 |
| 16 | 10.12 | 9.37 | 7.95 | 8.25 | 8.39 | 8.84 | 9.04 | 9.24 | 9.56 | 9.88 | 9.89 | 10.05 |
| 17 | 10.13 | 9.33 | 8.04 | 8.31 | 8.37 | 8.86 | 8.92 | 9.29 | 9.58 | 9.38 | 9.92 | 10.07 |
| 18 | 10.15 | 9.33 | 8.13 | 8.38 | 8.35 | 8.74 | 8.78 | 9.31 | 9.61 | 9.05 | 9.94 | 10.07 |
| 19 | 10.16 | 9.17 | 8.20 | 8.42 | 8.38 | 8.37 | 8.71 | 9.33 | 9.63 | 9.05 | 9.97 | 10.09 |
| 20 | 10.16 | 8.58 | 8.24 | 8.46 | 8.42 | 8.32 | 8.52 | 9.34 | 9.66 | 9.09 | 9.99 | 10.05 |
| 21 | 10.17 | 8.30 | 8.19 | 8.50 | 8.46 | 8.31 | 8.35 | 9.36 | 9.68 | 9.14 | 10.01 | 9.92 |
| 22 | 10.21 | 8.18 | 8.16 | 8.51 | 8.49 | 8.33 | 8.35 | 9.34 | 9.69 | 9.21 | 10.03 | 9.85 |
| 23 | 10.19 | 8.17 | 8.11 | 8.53 | 8.40 | 8.41 | 8.38 | 9.34 | 9.71 | 9.28 | 10.05 | 9.86 |
| 24 | 10.19 | 8.23 | 8.14 | 8.58 | 8.30 | 8.46 | 8.44 | 9.36 | 9.74 | 9.33 | 10.05 | 9.89 |
| 25 | 10.18 | 8.33 | 8.19 | 8.59 | 8.30 | 8.49 | 8.52 | 9.38 | 9.76 | 9.38 | 10.06 | 9.91 |
| 26 | 10.16 | 8.40 | 8.24 | 8.63 | 8.33 | 8.53 | 8.58 | 9.40 | 9.75 | 9.39 | 10.08 | 9.92 |
| 27 | 10.07 | 8.45 | 8.28 | 8.65 | 8.37 | 8.59 | 8.63 | 9.42 | 9.78 | 9.22 | 9.95 | 9.92 |
| 28 | 9.95 | 8.51 | 8.30 | 8.68 | 8.41 | 8.62 | 8.68 | 9.44 | 9.79 | 9.21 | 9.80 | 9.94 |
| 29 | 9.87 | 8.55 | 8.34 | 8.70 | 8.49 | 8.64 | 8.72 | 9.42 | 9.81 | 9.27 | 9.81 | 9.97 |
| 30 | 9.56 | 8.60 | 8.38 | 8.71 | ------ | 8.64 | 8.75 | 9.44 | 9.76 | 9.34 | 9.85 | 10.00 |
| 31 | 9.24 | ------ | 8.41 | 8.74 | ------ | 8.67 | ------ | 9.46 | ------ | 9.41 | 9.90 | ------ |
| MIN | 9.24 | 8.17 | 7.80 | 8.22 | 8.30 | 8.31 | 8.35 | 8.79 | 9.31 | 9.05 | 9.45 | 9.81 |
| MAX | 10.32 | 9.37 | 8.46 | 8.74 | 8.95 | 8.86 | 9.04 | 9.46 | 9.81 | 9.92 | 10.08 | 10.09 |
| MEAN | 10.05 | 8.91 | 8.11 | 8.44 | 8.61 | 8.62 | 8.75 | 9.20 | 9.57 | 9.53 | 9.82 | 9.95 |

1992 EXTREMES: MINIMUM - 7.80 (DEC 5), MAXIMUM - 10.32 (OCT 4), AVERAGE - 9.13

Table 43. Groundwater level data, WY 1991-1992, Sikeston observation well.

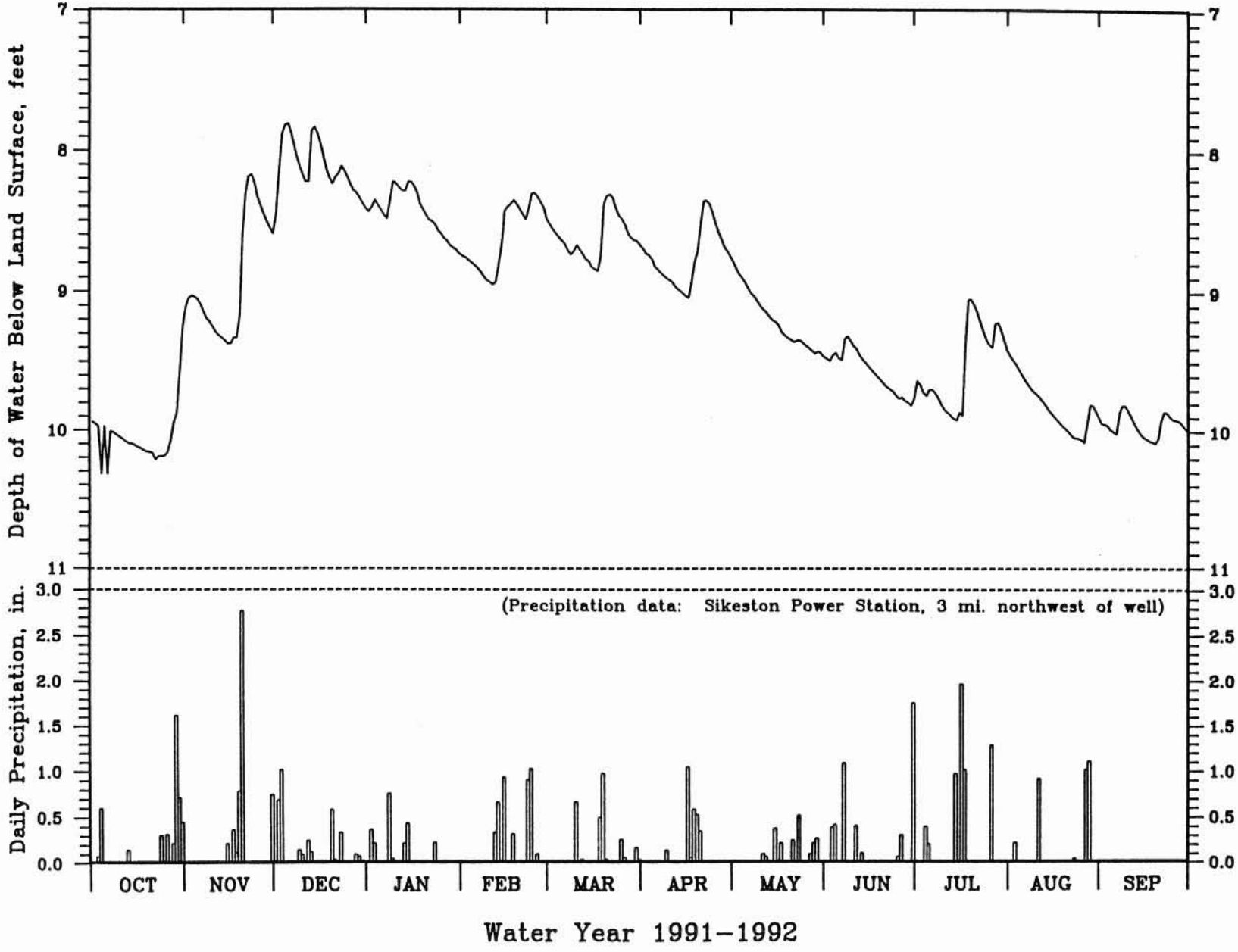



Figure 43. Water-level hydrograph and precipitation, Sikeston observation well.

MISSISSIPPI COUNTY: SW1/4 SW1/4 SEC. 29, T. 25 N., R. 16 E. DGLS LOG NUMBER: NONE
36 DEG 46 MIN 43 SEC NORTH LATITUDE, 89 DEG 21 MIN 23 SEC WEST LONGITUDE WELL OWNER: BRYANT FARMS
LAND SURFACE ELEVATION: 305 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX, 1.8 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 117 FEET WELL DIAMETER: 8 INCHES
CASING: 64 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED, 4-INCH PRODUCTION CASING FROM 64 TO 113 FEET
WELL PRODUCES FROM THE MISSISSIPPI EMBAYMENT ALLUVIUM
SCREEN INFORMATION: WELL CONTAINS 4 FEET OF 4 INCH WELL SCREEN
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1980). GRAPHIC RECORDER INSTALLED IN 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11.69 | 10.73 | 10.64 | 9.48 | 9.82 | 9.23 | 9.06 | 9.27 | 10.21 | 10.68 | 11.48 | 12.11 |
| 2 | 11.69 | 10.81 | 10.32 | 9.45 | 9.84 | 9.27 | 9.13 | 9.33 | 10.23 | 10.68 | 11.49 | 12.11 |
| 3 | 11.71 | 10.89 | 10.00 | 9.40 | 9.85 | 9.31 | 9.11 | 9.41 | 10.13 | 10.71 | 11.67 | 12.12 |
| 4 | 11.72 | 10.93 | 10.05 | 9.43 | 9.87 | 9.34 | 9.16 | 9.43 | 10.04 | 10.71 | 12.15 | 12.13 |
| 5 | 11.74 | 10.95 | 10.07 | 9.45 | 9.89 | 9.36 | 9.30 | 9.53 | 10.10 | 10.64 | 11.95 | 12.14 |
| 6 | 11.77 | 10.98 | 10.10 | 9.50 | 9.90 | 9.40 | 9.30 | 9.72 | 10.14 | 10.59 | 11.66 | 12.15 |
| 7 | 11.77 | 11.05 | 10.11 | 9.55 | 9.96 | 9.45 | 9.33 | 9.87 | 9.99 | 10.63 | 11.63 | 12.14 |
| 8 | 11.76 | 11.10 | 10.16 | 9.36 | 10.03 | 9.51 | 9.37 | 9.83 | 10.00 | 10.67 | 11.63 | 12.15 |
| 9 | 11.77 | 11.10 | 10.21 | 9.02 | 10.08 | 9.46 | 9.39 | 9.80 | 10.05 | 10.73 | 11.65 | 12.16 |
| 10 | 11.78 | 11.10 | 10.23 | 9.05 | 10.08 | 9.16 | 9.40 | 9.84 | 10.08 | 10.87 | 11.68 | 12.18 |
| 11 | 11.77 | 11.15 | 10.25 | 9.10 | 10.10 | 9.11 | 9.43 | 9.83 | 10.11 | 11.25 | 11.70 | 12.20 |
| 12 | 11.80 | 11.17 | 10.19 | 9.11 | 10.06 | 9.11 | 9.53 | 9.81 | 10.15 | 11.54 | 11.72 | 12.22 |
| 13 | 11.82 | 11.18 | 9.45 | 9.08 | 9.87 | 9.21 | 9.54 | 9.87 | 10.10 | 11.76 | 11.94 | 12.23 |
| 14 | 11.79 | 11.19 | 9.27 | 9.04 | 9.60 | 9.22 | 9.56 | 10.00 | 10.11 | 11.95 | 11.99 | 12.25 |
| 15 | 11.81 | 11.21 | 9.36 | 9.03 | 8.98 | 9.33 | 9.91 | 10.34 | 10.15 | 11.57 | 11.83 | 12.45 |
| 16 | 11.83 | 11.23 | 9.44 | 9.07 | 8.97 | 9.36 | 10.25 | 10.40 | 10.20 | 11.68 | 11.81 | 12.57 |
| 17 | 11.84 | 11.22 | 9.53 | 9.11 | 8.90 | 9.35 | 9.99 | 10.19 | 10.23 | 11.36 | 11.82 | 12.33 |
| 18 | 11.85 | 11.22 | 9.68 | 9.25 | 8.65 | 9.14 | 9.49 | 10.36 | 10.34 | 11.12 | 11.84 | 12.30 |
| 19 | 11.87 | 11.19 | 9.75 | 9.30 | 8.70 | 8.46 | 9.23 | 10.48 | 10.70 | 11.08 | 12.04 | 12.32 |
| 20 | 11.87 | 10.44 | 9.77 | 9.31 | 8.82 | 8.18 | 8.75 | 10.07 | 10.91 | 11.09 | 12.19 | 12.29 |
| 21 | 11.86 | 10.26 | 9.66 | 9.36 | 8.89 | 8.19 | 8.43 | 10.04 | 10.99 | 11.11 | 12.10 | 12.18 |
| 22 | 11.88 | 10.34 | 9.47 | 9.36 | 8.95 | 8.29 | 8.54 | 10.04 | 10.99 | 11.13 | 12.10 | 11.87 |
| 23 | 11.88 | 10.44 | 9.23 | 9.41 | 8.93 | 8.49 | 8.64 | 10.03 | 11.68 | 11.22 | 12.08 | 11.85 |
| 24 | 11.88 | 10.53 | 9.21 | 9.55 | 8.85 | 8.59 | 8.74 | 10.06 | 11.70 | 11.58 | 12.13 | 11.86 |
| 25 | 11.83 | 10.61 | 9.25 | 9.55 | 8.86 | 8.63 | 8.85 | 10.08 | 11.15 | 11.72 | 12.30 | 11.86 |
| 26 | 11.82 | 10.63 | 9.32 | 9.65 | 8.93 | 8.69 | 8.94 | 10.12 | 10.99 | 11.57 | 12.11 | 11.75 |
| 27 | 11.71 | 10.66 | 9.39 | 9.65 | 8.99 | 8.83 | 9.04 | 10.17 | 10.92 | 11.43 | 12.09 | 11.70 |
| 28 | 11.36 | 10.68 | 9.36 | 9.69 | 9.04 | 8.87 | 9.09 | 10.20 | 10.88 | 11.39 | 12.07 | 11.73 |
| 29 | 11.27 | 10.69 | 9.36 | 9.72 | 9.19 | 8.87 | 9.11 | 10.14 | 10.87 | 11.38 | 12.09 | 11.78 |
| 30 | 10.95 | 10.74 | 9.43 | 9.69 | ------ | 8.94 | 9.18 | 10.14 | 10.82 | 11.38 | 12.10 | 11.78 |
| 31 | 10.74 | ------ | 9.47 | 9.74 | ------ | 9.01 | ------ | 10.19 | ------ | 11.41 | 12.11 | ------ |
| MIN | 10.74 | 10.26 | 9.21 | 9.02 | 8.65 | 8.18 | 8.43 | 9.27 | 9.99 | 10.59 | 11.48 | 11.70 |
| MAX | 11.88 | 11.23 | 10.64 | 9.74 | 10.10 | 9.51 | 10.25 | 10.48 | 11.70 | 11.95 | 12.30 | 12.57 |
| MEAN | 11.70 | 10.88 | 9.73 | 9.37 | 9.40 | 9.01 | 9.23 | 9.95 | 10.50 | 11.18 | 11.91 | 12.10 |

1992 EXTREMES: MINIMUM - 8.18 (MAR 20), MAXIMUM - 12.57 (SEP 16), AVERAGE - 10.42

Table 44. Groundwater level data, WY 1991-1992, East Prairie observation well.

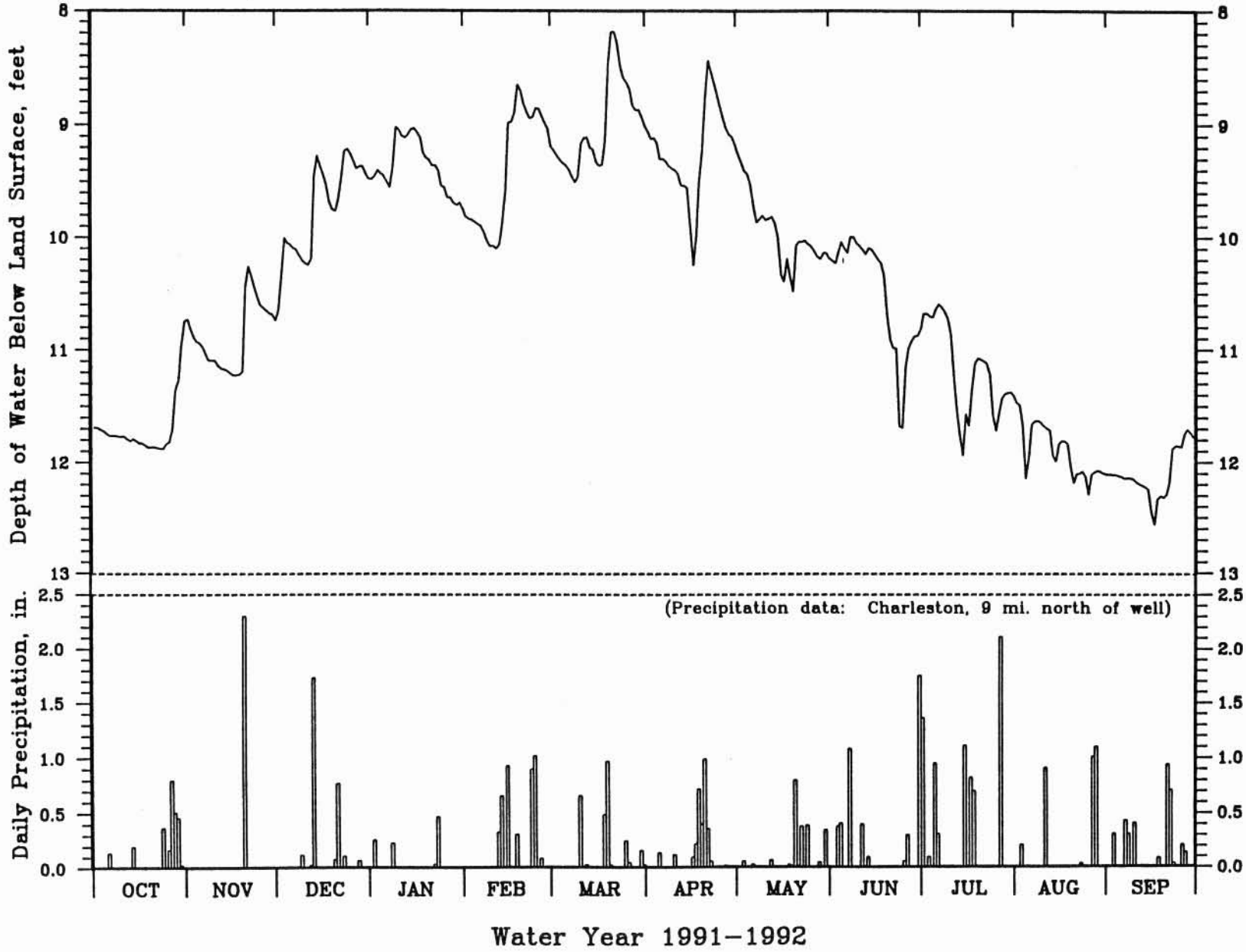



Figure 44. Water-level hydrograph and precipitation, East Prairie observation well.

DUNKLIN COUNTY: SE1/4 SW1/4 SEC. 34, T. 22 N., R. 10 E. DGLS LOG NUMBER: 14673
36 DEG 29 MIN 55 SEC NORTH LATITUDE, 89 DEG 58 MIN 18 SEC WEST LONGITUDE WELL OWNER: DGLS
LAND SURFACE ELEVATION: 287 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX 1.8 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 130 FEET WELL DIAMETER: 8 INCHES
CASING: 62 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED, 4-INCH STEEL PRODUCTION CASING FROM 62 TO 104 FEET
WELL PRODUCES FROM THE MISSISSIPPI EMBAYMENT ALLUVIUM (NOTE: **** DENOTES MISSING DATA)
SCREEN INFORMATION: WELL CONTAINS 4 FEET OF 4 INCH WELL SCREEN
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER (1980). GRAPHIC RECORDER INSTALLED 1956, 36 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16.21 | 16.67 | 16.02 | 15.04 | 14.65 | 14.51 | 14.11 | 14.45 | 15.00 | 15.16 | 15.86 | **** |
| 2 | 16.23 | 16.63 | 15.98 | 15.00 | 14.65 | 14.49 | 14.11 | 14.46 | 15.02 | 15.18 | 15.89 | **** |
| 3 | 16.26 | 16.58 | 15.96 | 14.98 | 14.65 | 14.48 | 14.09 | 14.48 | 15.04 | 15.19 | 15.91 | **** |
| 4 | 16.28 | 16.54 | 15.94 | 14.96 | 14.65 | 14.47 | 14.10 | 14.48 | 15.05 | **** | 15.96 | **** |
| 5 | 16.32 | 16.49 | 15.91 | 14.94 | 14.66 | 14.45 | 14.16 | 14.51 | 15.05 | **** | 16.03 | **** |
| 6 | 16.35 | 16.46 | 15.88 | 14.92 | 14.66 | 14.44 | 14.16 | 14.54 | 15.03 | **** | 16.08 | **** |
| 7 | 16.37 | 16.44 | 15.85 | 14.90 | 14.70 | 14.44 | 14.16 | 14.54 | 15.00 | **** | 16.10 | **** |
| 8 | 16.39 | 16.42 | 15.82 | 14.88 | 14.76 | 14.44 | 14.19 | 14.54 | 14.97 | **** | 16.14 | **** |
| 9 | 16.42 | 16.40 | 15.80 | 14.87 | 14.80 | 14.42 | 14.20 | 14.56 | 14.94 | **** | 16.16 | **** |
| 10 | 16.43 | 16.38 | 15.77 | 14.86 | 14.81 | 14.43 | 14.22 | 14.58 | 14.93 | 15.22 | 16.25 | **** |
| 11 | 16.45 | 16.38 | 15.75 | 14.84 | 14.84 | 14.42 | 14.24 | 14.59 | 14.92 | 15.24 | 16.35 | **** |
| 12 | 16.48 | 16.37 | 15.71 | 14.81 | 14.84 | 14.40 | 14.31 | 14.60 | 14.91 | 15.26 | 16.49 | **** |
| 13 | 16.51 | 16.36 | 15.68 | 14.79 | 14.85 | 14.40 | 14.32 | 14.62 | 14.91 | 15.28 | 16.65 | **** |
| 14 | 16.53 | 16.36 | 15.66 | 14.80 | 14.83 | 14.39 | 14.33 | 14.64 | 14.91 | 15.30 | 16.76 | **** |
| 15 | 16.55 | 16.37 | 15.62 | 14.78 | 14.82 | 14.39 | 14.35 | 14.66 | 14.90 | 15.32 | **** | **** |
| 16 | 16.58 | 16.38 | 15.58 | 14.76 | 14.84 | 14.37 | 14.37 | 14.68 | 14.94 | 15.34 | **** | **** |
| 17 | 16.60 | 16.37 | 15.55 | 14.74 | 14.78 | 14.35 | 14.39 | 14.70 | 14.96 | 15.36 | **** | **** |
| 18 | 16.63 | 16.37 | 15.52 | 14.73 | 14.75 | 14.32 | 14.39 | 14.72 | 14.96 | 15.38 | **** | **** |
| 19 | 16.66 | 16.38 | 15.48 | 14.71 | 14.75 | 14.33 | 14.41 | 14.73 | 14.98 | 15.40 | **** | **** |
| 20 | 16.68 | 16.37 | 15.43 | 14.69 | 14.72 | 14.32 | 14.40 | 14.75 | 15.01 | 15.42 | **** | **** |
| 21 | 16.69 | 16.34 | 15.39 | 14.66 | 14.68 | 14.29 | 14.41 | 14.77 | 15.04 | 15.44 | **** | **** |
| 22 | 16.72 | 16.31 | 15.33 | 14.65 | 14.65 | 14.27 | 14.43 | 14.79 | 15.06 | 15.45 | **** | **** |
| 23 | 16.74 | 16.28 | 15.29 | 14.65 | 14.63 | 14.26 | 14.42 | 14.80 | 15.07 | 15.48 | **** | **** |
| 24 | 16.77 | 16.25 | 15.27 | 14.65 | 14.59 | 14.24 | 14.41 | 14.81 | 15.08 | 15.50 | **** | **** |
| 25 | 16.79 | 16.22 | 15.23 | 14.65 | 14.57 | 14.21 | 14.43 | 14.83 | 15.08 | 15.52 | **** | **** |
| 26 | 16.81 | 16.18 | 15.20 | 14.65 | 14.56 | 14.18 | 14.44 | 14.84 | 15.09 | 15.54 | **** | **** |
| 27 | 16.83 | 16.14 | 15.17 | 14.64 | 14.54 | 14.18 | 14.44 | 14.89 | 15.11 | 15.56 | **** | **** |
| 28 | 16.83 | 16.11 | 15.14 | 14.64 | 14.52 | 14.15 | 14.44 | 14.94 | 15.13 | 15.58 | **** | **** |
| 29 | 16.84 | 16.07 | 15.11 | 14.64 | 14.54 | 14.12 | 14.42 | 14.95 | 15.14 | 15.75 | **** | **** |
| 30 | 16.82 | 16.05 | 15.09 | 14.64 | ------ | 14.12 | 14.43 | 14.96 | 15.15 | 15.82 | **** | **** |
| 31 | 16.73 | ------ | 15.06 | 14.64 | ------ | 14.11 | ------ | 14.98 | ------ | 15.84 | **** | ------ |
| MIN | 16.21 | 16.05 | 15.06 | 14.64 | 14.52 | 14.11 | 14.09 | 14.45 | 14.90 | 15.16 | 15.86 | **** |
| MAX | 16.84 | 16.67 | 16.02 | 15.04 | 14.85 | 14.51 | 14.44 | 14.98 | 15.15 | 15.84 | 16.76 | **** |
| MEAN | 16.56 | 16.36 | 15.55 | 14.78 | 14.70 | 14.34 | 14.31 | 14.69 | 15.01 | **** | **** | **** |

1992 EXTREMES: MINIMUM - 14.09 (APR 3), MAXIMUM - 16.84 (OCT 29), AVERAGE - ****

Table 45. Groundwater level data, WY 1991-1992, Malden observation well.

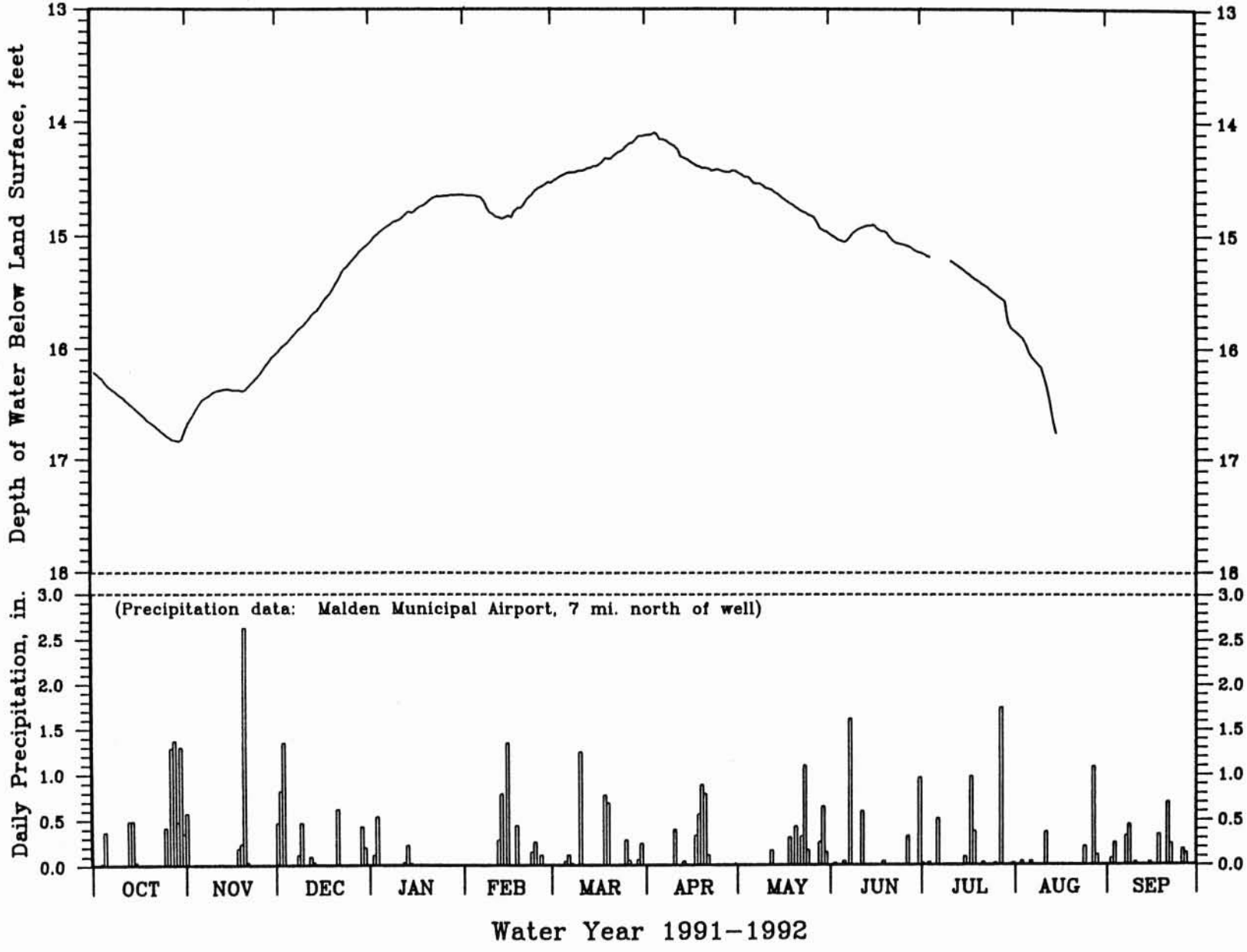



Figure 45. Water-level hydrograph and precipitation, Malden observation well.

PEMISCOT COUNTY: NW1/4 NE1/4 SEC. 36, T. 17 N., R. 11 E. DGLS LOG NUMBER: 14804
36 DEG 04 MIN 22 SEC NORTH LATITUDE, 89 DEG 48 MIN 48 SEC WEST LONGITUDE WELL OWNER: MO. HWY. DEPT.
LAND SURFACE ELEVATION: 260 FEET ABOVE MEAN SEA LEVEL.
MEASURING POINT IS BASE OF RECORDER BOX 1.6 FEET ABOVE LAND SURFACE
TOTAL DEPTH: 132 FEET WELL DIAMETER: 8 INCHES
CASING: 62 FEET OF 8 INCH STEEL CASING, NOT PRESSURE GROUTED, 4-INCH STEEL PRODUCTION CASING FROM 62 TO 128 FEET
WELL PRODUCES FROM THE MISSISSIPPI EMBAYMENT ALLUVIUM
SCREEN INFORMATION: WELL CONTAINS 4 FEET OF 4 INCH WIRE-WOUND STAINLESS STEEL WELL SCREEN
TYPE OF INSTALLATION: STEVENS SERIES 7000 DIGITAL RECORDER INSTALLED IN 1980, 12 YEARS OF DATA

WATER LEVEL DEPTH BELOW LAND SURFACE (FEET), WATER YEAR 1991 - 1992
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.87 | 14.48 | 13.80 | 12.59 | 12.69 | 12.59 | 11.77 | 12.80 | 13.70 | 12.97 | 14.05 | 14.47 |
| 2 | 14.89 | 14.48 | 13.56 | 12.57 | 12.73 | 12.59 | 11.84 | 12.84 | 13.71 | 13.02 | 14.07 | 14.48 |
| 3 | 14.93 | 14.47 | 13.24 | 12.59 | 12.75 | 12.59 | 11.86 | 12.88 | 13.63 | 13.09 | 14.03 | 14.52 |
| 4 | 14.95 | 14.47 | 13.18 | 12.63 | 12.78 | 12.60 | 11.92 | 12.89 | 13.54 | 13.14 | 14.05 | 14.55 |
| 5 | 15.00 | 14.44 | 13.13 | 12.65 | 12.80 | 12.61 | 12.04 | 12.94 | 13.55 | 13.14 | 14.08 | 14.57 |
| 6 | 15.03 | 14.44 | 13.14 | 12.69 | 12.83 | 12.63 | 12.07 | 13.01 | 13.54 | 13.12 | 14.11 | 14.60 |
| 7 | 15.04 | 14.49 | 13.14 | 12.73 | 12.88 | 12.68 | 12.11 | 13.03 | 13.08 | 13.13 | 14.13 | 14.63 |
| 8 | 15.05 | 14.53 | 13.17 | 12.55 | 12.96 | 12.72 | 12.17 | 13.03 | 12.86 | 13.17 | 14.17 | 14.66 |
| 9 | 15.07 | 14.53 | 13.20 | 12.12 | 13.01 | 12.64 | 12.21 | 13.08 | 12.83 | 13.23 | 14.20 | 14.68 |
| 10 | 15.08 | 14.52 | 13.20 | 12.07 | 13.02 | 12.05 | 12.25 | 13.13 | 12.79 | 13.29 | 14.18 | 14.72 |
| 11 | 15.08 | 14.57 | 13.19 | 12.08 | 13.06 | 11.80 | 12.30 | 13.15 | 12.62 | 13.33 | 13.96 | 14.75 |
| 12 | 15.11 | 14.59 | 13.15 | 12.08 | 13.06 | 11.76 | 12.40 | 13.16 | 12.40 | 13.37 | 13.92 | 14.77 |
| 13 | 15.14 | 14.60 | 12.73 | 12.06 | 13.06 | 11.82 | 12.43 | 13.26 | 12.35 | 13.42 | 13.95 | 14.79 |
| 14 | 15.14 | 14.61 | 12.50 | 11.97 | 13.03 | 11.84 | 12.44 | 13.43 | 12.36 | 13.45 | 14.01 | 14.82 |
| 15 | 15.16 | 14.64 | 12.47 | 11.89 | 12.93 | 11.92 | 12.48 | 13.51 | 12.40 | 13.54 | 14.06 | 14.85 |
| 16 | 15.19 | 14.67 | 12.48 | 11.90 | 12.98 | 11.96 | 12.52 | 13.49 | 12.45 | 13.57 | 14.11 | 14.88 |
| 17 | 15.20 | 14.67 | 12.52 | 11.92 | 12.93 | 11.97 | 12.55 | 13.54 | 12.50 | 13.58 | 14.16 | 14.88 |
| 18 | 15.22 | 14.67 | 12.61 | 12.01 | 12.95 | 11.80 | 12.56 | 13.49 | 12.56 | 13.62 | 14.20 | 14.90 |
| 19 | 15.25 | 14.69 | 12.65 | 12.06 | 13.03 | 11.33 | 12.55 | 13.49 | 12.61 | 13.65 | 14.23 | 14.93 |
| 20 | 15.24 | 14.09 | 12.67 | 12.08 | 13.07 | 11.12 | 12.50 | 13.51 | 12.74 | 13.69 | 14.26 | 14.93 |
| 21 | 15.24 | 13.74 | 12.67 | 12.12 | 13.07 | 11.07 | 12.46 | 13.54 | 12.95 | 13.74 | 14.30 | 14.94 |
| 22 | 15.26 | 13.67 | 12.63 | 12.13 | 13.07 | 11.12 | 12.52 | 13.55 | 13.01 | 13.79 | 14.33 | 14.96 |
| 23 | 15.28 | 13.70 | 12.47 | 12.19 | 12.96 | 11.24 | 12.54 | 13.56 | 12.99 | 13.86 | 14.37 | 14.99 |
| 24 | 15.29 | 13.74 | 12.39 | 12.34 | 12.85 | 11.31 | 12.57 | 13.59 | 12.98 | 13.88 | 14.38 | 15.00 |
| 25 | 15.30 | 13.77 | 12.36 | 12.36 | 12.80 | 11.34 | 12.62 | 13.60 | 13.02 | 13.89 | 14.39 | 15.01 |
| 26 | 15.30 | 13.78 | 12.37 | 12.45 | 12.70 | 11.39 | 12.66 | 13.63 | 12.92 | 13.90 | 14.40 | 15.02 |
| 27 | 15.26 | 13.79 | 12.40 | 12.48 | 12.60 | 11.50 | 12.70 | 13.68 | 12.86 | 13.89 | 14.38 | 15.06 |
| 28 | 15.12 | 13.81 | 12.40 | 12.54 | 12.55 | 11.54 | 12.72 | 13.78 | 12.87 | 13.92 | 14.35 | 15.08 |
| 29 | 15.06 | 13.81 | 12.45 | 12.57 | 12.60 | 11.55 | 12.73 | 13.67 | 12.91 | 13.95 | 14.36 | 15.10 |
| 30 | 14.78 | 13.86 | 12.52 | 12.57 | ------ | 11.64 | 12.76 | 13.68 | 12.93 | 13.97 | 14.40 | 15.10 |
| 31 | 14.57 | ------ | 12.57 | 12.63 | ------ | 11.71 | ------ | 13.69 | ------ | 14.01 | 14.44 | ------ |
| MIN | 14.57 | 13.67 | 12.36 | 11.89 | 12.55 | 11.07 | 11.77 | 12.80 | 12.35 | 12.97 | 13.92 | 14.47 |
| MAX | 15.30 | 14.69 | 13.80 | 12.73 | 13.07 | 12.72 | 12.76 | 13.78 | 13.71 | 14.01 | 14.44 | 15.10 |
| MEAN | 15.10 | 14.28 | 12.81 | 12.31 | 12.89 | 11.88 | 12.38 | 13.34 | 12.92 | 13.53 | 14.19 | 14.82 |

1992 EXTREMES: MINIMUM - 11.07 (MAR 21), MAXIMUM - 15.30 (OCT 25), AVERAGE - 13.37

Table 46. Groundwater level data, WY 1991-1992, Steele observation well.

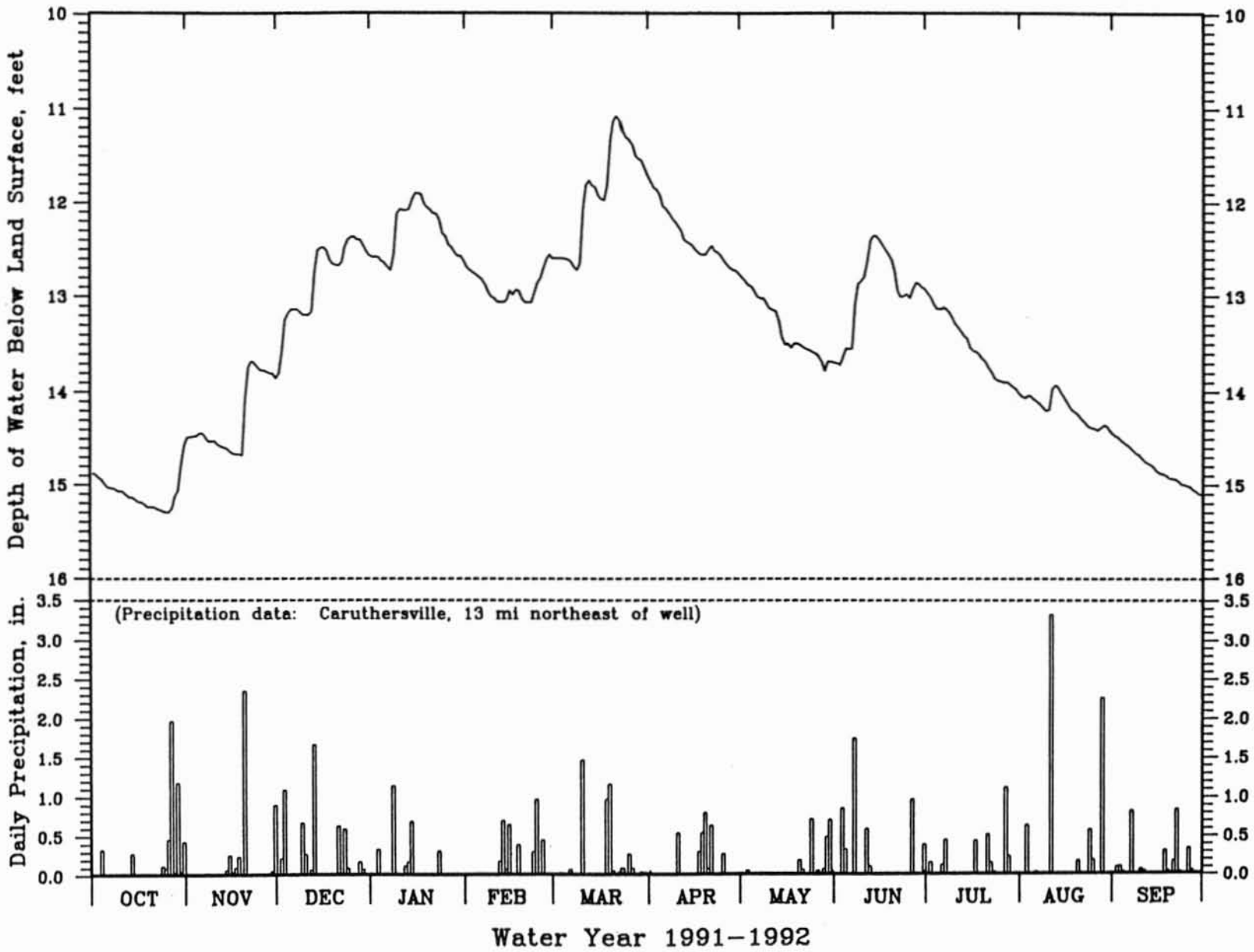



Figure 46. Water-level hydrograph and precipitation, Steele observation well.

# MISSOURI DEPARTMENT OF NATURAL RESOURCES

June 1993

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